PURDUE UNIVERSITY – PHYS 172: *MODERN MECHANICS*
FALL 2023 COURSE SYLLABUS & SCHEDULE

COURSE CREDIT HOURS: 4

PREREQUISITES: MA 161 or equivalent (may be taken concurrently)

INSTRUCTIONAL MODALITY: Face-to-Face

COURSE EMAIL: phys172@lists.purdue.edu

This is the official, common email for the course for any questions related to any of the course components (lectures, recitation, laboratory, homework, exams) or questions related to the course syllabus and/or schedule, study tips or help, etc. Course coordinators, Lecturers, or Graduate Teaching Assistants may respond to your email. Emails are read 8 a.m. to 5 p.m. EST daily and we will do our best to respond within 24 hours. Please be flexible with these times before deadlines and exams and on weekends and holidays. The subject line must start with **PHYS 172**: Following this, please include the topic of your query (i.e., HW questions, Lecture questions, Recitation question, Lab question, Exam question, etc.). If you have a medical emergency, DRC, personal concern, or any email of a personal nature, please contact any of the Course Coordinators directly.

COURSE LEARNING GOALS: After completing this course you should be able to.

- ***Identify, describe,*** and ***explain*** three fundamental physical *principles*: Momentum, Energy, and Angular Momentum.
- ***Identify*** and ***explain*** the *models* -- point particle or extended systems – that are used to ***describe*** physical situations.
- ***Identify*** useful *approximations* and *assumptions* that are relevant to physical situations.
- ***Analyze*** physical situations and contexts in terms of *systems* and *surroundings*.
- ***Apply*** the three *principles* to the *model* of physical *system* and *surroundings* in the context of appropriate *assumptions* and *approximations* to determine unknown physical variables, based on known physical variables.
- ***Evaluate*** and ***argue*** whether you have appropriately *analyzed* a physical situation in terms of the system and surrounding, *identified* the model for the system, *identified* reasonable approximations and assumptions, necessary to *apply* one or more of the three fundamental principles.
- ***Design*** a real-world situation in which you can ***formulate*** a process to determine one or more unknown variables by ***applying*** one or more of the three fundamental *principles* to ***analyze*** the physical situation by ***identifying*** the *system* and *surroundings* based on ***identifying*** appropriate *assumptions* and *approximations*.

COORDINATORS:

COURSE COORDINATOR	COORDINATOR OF DIGITAL INSTRUCTION
Dr. N. Sanjay Rebello (rebellos@purdue.edu) WebEx Office: https://purdue.webex.com/meet/rebellos Office: Room 232, PHYS Office Hours: Wed. 10:30 – 11:30 am or by Appointment. Phone:785-537-7543 (Cell) – Use for Emergencies only	**Mr. David Huckleberry** (dhuckleb@purdue.edu) WebEx Office: https://purdue.webex.com/meet/dhuckleb Office Hours: by Appointment.

LECTURERS: All Lectures meet in PHYS Rm. 114

Dr. Robert Austin (austin97@purdue.edu) Office: Rm. 290D, PHYS Office hours: Thursday 2:00-3:00 PM ET or by Appt. Lecture: 11:30 AM	**Dr. Srividya Iyer-Biswas** (iyerbiswas@purdue.edu) Office: Rm. 068, PHYS, Office hours: Thursday 11:30 – 12:20 ET. Lectures: 10:30AM & 12:30PM.
Dr. Qi-Yu (Grace) Liang (qyliang@purdue.edu) Office: Room 264, PHYS Office hours: Tuesday 3:30-4:30 PM ET or by Appt. Lectures: 1:30PM & 2:30PM	

LAB INSTRUCTORS (By Section):

LAB#	DAY	TIME	ROOM	LAB GTA (email@purdue.edu)	LAB UTA (email@purdue.edu)
126	T	11:30	8	BRALIN, AMIR (abralin)	DeGeyter, Katie (kdegeyte)
127	T	1:30	8	CHATTA SUBRAMANIAM, RAVI (rchattas)	Hippargi, Shrikar (shipparg)
128	T	3:30	8	LAFONTAINE, CADEN (clafont)	Evancho, Katrina (kevancho)
129	T	3:30	18	SAVAGE, SEAN (savage26)	Ananth, Ananya (ananth3)
132	W	7:30	8	WESOLEK, ABIGAIL (awesole)	Sengsanith, Evan (esengsan)
163	W	7:30	18	ZIMMER, NOAH (zimmer74)	Cessa, Isabella (icessa)
133	W	9:30	8	WESOLEK, ABIGAIL (awesole)	Lingam, Lahari (lingaml)
135	W	9:30	18	LAFONTAINE, CADEN (clafont)	Veeredhi, Shreya (sveeredh)
137	W	11:30	8	SAMAL, SAI SATYAM (samals)	Jones, Emily (jone2324)
136	W	11:30	18	LAFONTAINE, CADEN (clafont)	DeGeyter, Katie (kdegeyte)
141	W	1:30	8	SAMAL, SAI SATYAM (samals)	Shah, Adit (shah630)
140	W	1:30	18	LAFONTAINE, CADEN (clafont)	Maldonado, Abril (maldon26)
142	W	3:30	8	SAMAL, SAI SATYAM (samals)	Riffell, Justina (jriffell)
145	W	3:30	18	SAVAGE, SEAN (savage26)	Maldonado, Abril (maldon26)
147	Th	11:30	8	SAMAL, SAI SATYAM (samals)	Hippargi, Shrikar (shipparg)
148	Th	1:30	8	SAVAGE, SEAN (savage26)	Willey, Madeline (willey3)
151	F	9:30	8	CARLSON, MICHAEL (carls113)	Veeredhi, Shreya (sveeredh)
149	F	9:30	18	WESOLEK, ABIGAIL (awesole)	Sengsanith, Evan (esengsan)
152	F	11:30	8	VALADEZ, DENNISE (dvalade)	Veeredhi, Shreya (sveeredh)
155	F	11:30	18	WESOLEK, ABIGAIL (awesole)	Sengsanith, Evan (esengsan)
156	F	1:30	8	CARLSON, MICHAEL (carls113)	Shah, Adit (shah630)
159	F	1:30	18	ZIMMER, NOAH (zimmer74)	Jittu, Jessica (jjittu)
162	F	3:30	8	SAVAGE, SEAN (savage26)	Willey, Madeline (willey3)
160	F	3:30	18	ZIMMER, NOAH (zimmer74)	Jittu, Jessica (jjittu)

RECITATION INSTRUCTORS (By Section)

REC#	DAY	TIME	ROOM	REC GTA (email@purdue.edu)	REC UTA (email@purdue.edu)
104	T	3:30	238	SCHULTZ, ERIC (schul211)	Santosh, Joshua (jsantosh)
105	T	4:30	238	SCHULTZ, ERIC (schul211)	Santosh, Joshua (jsantosh)
107	W	8:30	238	GLOVER, MARLA (mjglover)	Shi, Runze (shi546)
108	W	9:30	238	GLOVER, MARLA (mjglover)	Shelchuk, Abby (ashelchu)
109	W	10:30	238	GLOVER, MARLA (mjglover)	Shi, Runze (shi546)
110	W	11:30	238	GIORGADZE, IRAKLI (igiorgad)	Camara, Guilherme (camarag)
111	W	12:30	238	GIORGADZE, IRAKLI (igiorgad)	Nguyen, Griffin (nguye775)
112	W	1:30	238	GIORGADZE, IRAKLI (igiorgad)	Nguyen, Griffin (nguye775)
113	W	2:30	238	BARROW, KEVIN (barrowk)	McCrindle, Kara (kmccrind)
114	W	3:30	238	BARROW, KEVIN (barrowk)	McCrindle, Kara (kmccrind)
115	W	4:30	238	SCHULTZ, ERIC (schul211)	Jaison, Donna (djaison)
164	W	5:30	238	GIORGADZE, IRAKLI (igiorgad)	Jaison, Donna (djaison)
116	Th	8:30	238	SUMMERS, MATT (summer55)	Riffell, Justina (jriffell)
117	Th	9:30	238	SUMMERS, MATT (summer55)	Riffell, Justina (jriffell)
118	Th	10:30	238	SUMMERS, MATT (summer55)	Riffell, Justina (jriffell)
119	Th	11:30	238	ALLEN, WINTER (allen564)	Shelchuk, Abby (ashelchu)
120	Th	12:30	238	ALLEN, WINTER (allen564)	Shelchuk, Abby (ashelchu)
121	Th	1:30	238	ALLEN, WINTER (allen564)	Shelchuk, Abby (ashelchu)
122	F	8:30	238	GIORGADZE, IRAKLI (igiorgad)	Riffell, Justina (jriffell)

REC#	DAY	TIME	ROOM	REC GTA (email@purdue.edu)	REC UTA (email@purdue.edu)
123	F	9:30	238	SUMMERS, MATT (summer55)	Riffell, Justina (jriffell)
124	F	10:30	238	SUMMERS, MATT (summer55)	Shi, Runze (shi546)
153	F	11:30	238	SUMMERS, MATT (summer55)	Shi, Runze (shi546)
154	F	12:30	238	BARROW, KEVIN (barrowk)	Concannon, Thomas (tconcan)
157	F	1:30	238	BARROW, KEVIN (barrowk)	Concannon, Thomas (tconcan)
158	F	2:30	238	BARROW, KEVIN (barrowk)	Santosh, Joshua (jsantosh)
161	F	3:30	238	BARROW, KEVIN (barrowk)	Santosh, Joshua (jsantosh)

HELP CENTER

GTA (email@purdue.edu)	HELP CENTER HOURS (Room: PHYS 290)
GIORGADZE, IRAKLI (igirogad)	F 9:30 - 10:30AM
MANDAL, SOUMYA (mandal15)	W 3.00PM -6.00PM, F 2.00PM - 5.00PM
RAJ, AYUSH (raj42)	M 11:00AM - 1:30PM, W2:00PM - 3:00PM, F11:00AM - 1:30PM
ROY, SHASWATA (roy134)	W 9:30AM - 12:20PM, W1:30-4:30PM
SULLIVAN-WOOD, JONATHAN (sulli391)	M 10:00AM-12:00PM, TU 10:00-11:00AM, W 10:00AM-12:00PM, W 3:00 - 4:00PM
VALADEZ, DENNISE (dvalde)	F 12:00PM- 3:00PM
ZIMMER, NOAH (zimmer74)	W 10:00AM -11:00AM, F 10:00AM – 11:00AM

RECITATION AND LABORATORY SESSIONS:

- **During WEEK 01,** as per the instructions in *Brightspace* **…**
  - Please attend your **RECITATION 01section IN PERSON.** Turn it in by the **DUE TIME** (See *Course Schedule*).
  - Please complete **LAB 01 at home**. Turn it in by the **DUE TIME** (See *Course Schedule*).
  - Attend **BOTH** your **LECTURES 01 & 02**. **Go through the PRE-LECTURE videos beforehand**.
  - Complete **HOMEWORK 01** before the **DUE TIME** (See *Course Schedule*).
- Both RECITATION and LAB sessions **will meet in person starting WEEK 02** as scheduled.
- The Registrar assigns each student to a specific Recitation and a specific Laboratory section**. You MUST ATTEND YOUR ASSIGNED SECTIONS**. If you attend another Recitation or Lab section, you will receive no credit.
- You can only change your Recitation or Laboratory section through the Registrar. If you change your Recitation or Lab section, you must notify the course coordinator and GTAs of both the section you are leaving and the one you are joining.

MATERIALS

- ***Matter & Interactions – Volume 1 – Modern Mechanics*** (4th Edition), by Chabay and Sherwood (Wiley). You can purchase a used hard copy of the text online. The electronic version of textbook is also available for purchase (from the Purdue University bookstore) with access code for the online homework system (*WileyPLUS*). If you only wish to use the eBook, you will be able to find the link to purchase this on the *Brightspace* page for this course, and you can purchase it there along with the *WileyPLUS* homework system.
- ***iClicker***: NOTE: We are using the "iClicker" audience response system.
  - Only **iClicker** or **iClicker2** (NOT the phone app version) can be used for PHYS 172. Set the frequency to AA.
  - When you buy your iClicker, save your receipt. In rare cases units need to be returned to the bookstore, and having the receipt is helpful.
  - You MUST register the serial number of your own iClicker on *Brightspace* NOT on iClicker's website! If you fail to do this, you may lose the points from the lecture quizzes you have earned.
  - If you replace your iClicker for whatever reason (for example, you lose it or it fails), send an email to the Course Coordinator (rebellos@purdue.edu). Include your name, your old and new iClicker IDs. Never use a clicker registered to anybody else in this class, and never have two or more clickers in your possession at any lecture. **This is a violation of the Academic Honesty policy**. Anybody found in violation of this policy will receive a failing grade in the course.

- You may attend any of the lecture sections. However, you may only answer clicker questions in one lecture. If we find that you have answered clicker questions in multiple lectures on the same day, you will receive no clicker points for that day.

- ***WileyPLUS***: You will need an access code from *WileyPLUS* to complete the weekly online homework. You can find the link to purchase this on *Brightspace* on the left-hand panel.
- **Other Materials**:
  - Access to laptop, tablet, or computer. You are required to bring a laptop to each **LAB** and **RECITATION**.
  - Access to Word Processor (i.e. MS Word), remember that MS Office is free for all students, PDF converter (free apps can be found)
  - Access to *Brightspace*. This is where all course materials will be provided as well as access to and submission of course assignments.

DO THESE ASAP!

Please complete the following at the earliest convenience. Please also refer to the Schedule for the exact due dates and times for various assignments.

- Purchase ALL of the materials listed above.
- Go through all the information on the left panel of *Brightspace*.
  - In *Brightspace* in the top menu click on Content and then in the left panel click on **GETTING STARTED QUIZZES**. Therein you will find two Quizzes. **You need to get 100% on BOTH Quizzes.** Only if you score 100% on these two Quizzes will you be able to see the **COURSE CONTENT (by Week)**
  - In *Brightspace* in the top menu click on Content and then in the left panel click on **WileyPLUS RESOURCES** on the left panel of the course webpage. From here click on the first link "**Purdue Physics 172 and 272 WileyPLUS Registration**" and follow the instructions therein.
  - After you have completed both Quizzes above and scored 100% on both, in the top menu click on Content and then in the left panel click on **COURSE CONTENT (by WEEK)** of the course webpage. Start with **MODULE 1 > WEEK 01**. **You need to complete everything here as per the due dates listed**. Weekly folders will be provided as we progress through the semester.
- **Register your iClicker** via the registration link in *Brightspace* (See *COURSE INFO* Folder)
- Complete **RECITATION 01** IN PERSON (See *COURSE SCHEDULE* section in the *Syllabus* for due date and time)
- Complete **HOMEWORK 01** (See *COURSE SCHEDULE* section in the *Syllabus* for due date and time)
- Complete **LAB 01** at home (See *COURSE SCHEDULE* section in the *Syllabus* for due date and time)

EXAM DATES: **IN-PERSON attendance is required for ALL Mid-Term EXAMS and the FINAL EXAM**.

- **Mid-Term EXAM 1: 6:30 – 7:30 PM, Tuesday, September 26.**
  - **LOCATION: Elliott Hall of Music: Main Floor (ELLT 116)**.
- **Mid-Term EXAM 2: 8:00 – 9:00 PM, Monday, October 30.**
  - **LOCATION: Elliott Hall of Music: Main Floor (ELLT 116)**.
- **FINAL EXAM**: **3:30 – 5:30 PM, Monday, December 11.**
  - **LOCATION: Elliott Hall of Music: Main Floor (ELLT 116)**.

COURSE OVERVIEW

PHYS 172 is the first semester of calculus-based physics with an emphasis on modern mechanics. A first semester calculus course such as MATH 161 is a co-requisite for PHYS 172; calculus concepts will be introduced gradually throughout this course. We assume a mastery of high school algebra as a prerequisite, and prior exposure to high school physics is highly recommended.

This is a 4-credit hour course. All the course materials will be distributed online through *Brightspace* website for the course. You should anticipate spending about *15 hours per week on average (i.e., about 3 hours per DAY on average)* on this course. This time will be spent on learning from the lectures, homework, recitation, and laboratory assignments, and studying for exams. This is the *typical, average* time commitment for a student in this course, but the required time

commitment to succeed is different for each student. If you find yourself falling behind, you need to devote more time than you currently do.

A complete course schedule of class meetings is in the General Course Information folder within *Brightspace*. This schedule shows all holidays, evening exams, homework, recitation, lab, and reading assignments. You will be informed of the date and time of the Final Exam as soon as it is announced by the Registrar. DO NOT make travel plans to leave campus until then.

COURSE CONTENT

Major portions of Chapters 1 through 11 of the textbooks will be covered this semester, as indicated in the reading assignments for each lecture (see *Course Schedule*). This curriculum features a unified approach that combines traditional mechanics and a modern view of quantized atomic levels. Applications will include topics involving asteroids, black holes, nuclear fission and fusion, quantization in atoms and molecules, and heat capacity. As a result of completing this course, you will come to understand and be able to describe a wide range of physical phenomena using only a few fundamental principles of physics.

COURSE COMPONENTS

The course will have the following components. Materials for each component will be provided online via *Brightspace*.

LECTURES: There will be two lectures each week for a total of 28 Lectures in the semester (see *Course Schedule*).

- Each lecture on Tuesday and Thursday is delivered at different times to different sections in PHYS 114. Since most of the lectures are nearly full capacity, we prefer that you attend the section assigned to you by the Registrar.
- **BEFORE each Lecture, you MUST go through the short (~20 minute) PRE-LECTURE posted online on Brightspace in the LECTURES folder for each week. Doing so will enable you to get the most out of the LECTURES.**
- If you are unable to attend your assigned lecture section on a given lecture day, you may attend an alternative lecture section that day and participate in the Clicker Questions to receive points.
- You should read the assigned sections of the text (see *Course Schedule*) prior to each lecture and use the lecture session to clarify and reinforce the ideas covered in the assigned readings.
- To assist you in reviewing lectures for study purposes, Boiler Cast videos will be made available for the weekly lectures. If you only rely on Boiler Cast videos, you will miss out on Clicker Question points and will not be able to see any problem solving completed on the overhead or demonstrations in the lecture room.
- Thus, lecture attendance is VERY STRONGLY recommended to understand the material. A video of Lecture 00 on *Brightspace* is a review of the mathematical concepts necessary for this course.

ICLICKER QUESTIONS: Clicker questions in lecture are designed to provide feedback to the instructor and to you regarding your understanding of the lecture material.

- Clicker questions will count towards your final grade. You may attend a lecture that you are not enrolled in and your Clicker points will still count.
- Clicker question points are based on correctness of responses unless otherwise specified. For each lecture, two-thirds of the points for the lecture will be based on participation i.e., you get those points if you answer all questions regardless of the answer. The remaining one-third of the points will be based on the correctness of your answers. Not all questions may be selected for determining your correctness score. Selection of questions to be graded for points will be at the discretion of the Lecturers and/or Course Coordinator.
- You may use only your own Clicker during a lecture. If you have more than one clicker, it will count as cheating, and you will face all the consequences of violating the Academic Honesty policy. Similarly, you are NOT allowed to share your Clicker with anyone else in this class, even if they attend a different Lecture section.
- You are required to register your iClicker using the link under COURSE INFO on *Brightspace*. You need to do this before LECTURE 04 in the course. **If you fail to Register your iClicker you will NOT get points for participation**.
- There are a total of 28 lectures during the semester. We understand that many students may not have access to a personal iClicker during the first week of classes or may be enrolling into class during the first week of class or unable to attend for various reasons during the first week. Therefore, clicker points will not count during the first three Lectures. This means there are a total of 25 lectures that will be counted towards clicker points in the

semester starting with Lecture 04. At the end of the semester, the **five** lowest clicker scores will be dropped. **These drops will cover those occasions on which you miss a LECTURE due to a brief illness, COVID-19/Quarantine, field trip, club sport event, internship, job fair, etc.**

- **There will NO MAKE-UP for any of the LECTURES**. If you miss a Lecture for any reason, you are first required to use the allowed drops for any absence. However, **if you have already used up your allowed drops and have a valid reason for an absence**, you may request an exemption. Such exemptions, which will be very rare, will ONLY be made if you follow the procedure outlined in the **EXCUSED ABSENCE/ EXEMPTION/ EXTENSION** section in the Syllabus.

HOMEWORK: Two homework assignments will be due each week (Wednesday/Friday) **unless otherwise specified** and are generally due at 11:59PM on the due date (See *Course Schedule*).

- You will access and submit your homework online using a system called *Wiley Plus* within *Brightspace*. The system contains a compendium of problems that we will use for our course. You will have to purchase access to the system. You can access this through *Brightspace*.
- If you do not complete a homework assignment by the due date/time, you automatically get a 3-day extension. But you can only earn up to a maximum of 75% of the points on the late problems.
- We strongly recommend you complete all homework problems, even if late, to help prepare for the exams.
- You will have 10 attempts per question for each assignment.
- DEADLINE & LATE POLICY FOR HOMEWORK: **Deadline**: **11:59 PM on date posted in Course Schedule** *If you complete the Homework within 72 hours of the due time you will receive 75% of the points you earn. After that you will receive 0 points.*
- There is a total of 25 Homework in the semester. At the end of the semester, the **five** lowest Homework scores will be dropped for all students. **These drops will cover those occasions on which you miss a HOMEWORK due to technical issue, a brief illness, COVID-19/Quarantine, field trip, club sport event, internship, job fair, etc.**
- **There will NO EXTENSIONS for any of the HOMEWORK**. If you are unable to complete the HOMEWORK for any reason, you may do so for 75% credit until 72 hours after the deadline. Beyond 72 hours after the deadline, please use your allowed drops. However, **if you have already used up your allowed drops and have a valid reason for not completing your HOMEWORK past 72 hours after the deadline**, you may request an extension. Such extensions, which will be very rare, will ONLY be made if you follow the procedure outlined in the **EXCUSED ABSENCE/ EXEMPTION/ EXTENSION** section in the Syllabus.

RECITATION: Weekly Recitation sessions meet for 1 hour (50 minutes) most weeks (see *Course Schedule*).

- There **WILL BE a RECITATION meeting in WEEK 01**. Please be **sure to attend the REC section for which you are registered**. You will need to attend YOUR assigned REC section to receive points for REC 01.
- The Recitation worksheet will be posted in the appropriate week's folder within *Brightspace*. You are encouraged to look over the problems ahead of time so that you come to class ready to work and ask questions. Solutions to recitation problems will be posted in the folder at the end of the week (12:01 AM Sunday). **Please download and go through the Recitation Worksheet posted in *Brightspace* in the COURSE CONTENT > MODULE > WEEK > RECITATION folder, BEFORE your assigned RECITATION section time**.
- Starting **Week 01**, you are **REQUIRED** to attend **YOUR ASSIGNED** (by the Registrar) **Recitation** section. Please **BRING A LAPTOP OR TABLET TO EACH LAB MEETING THAT IS FULLY CHARGED**. You will need this to complete the Recitation before you leave. You will get 0 points for the RECITATION if you are more than 15 minutes late to you REC session.
- You will work in groups of **up to four** people. You are free to form a group with anyone in your Recitation section, but you must remain in that group for the entire semester. At your first Recitation meeting (Week 02), your TA will instruct you how to sign up for your group. The Recitation group will be different from the group you form in your Lab section.
- Each member in the group must complete and turn-in the recitation problem-solving activities and upload either a scan copy or clear photo (saved as single PDF file) of their work to *Brightspace* in the appropriate assignment upload link. Your recitation instructor will randomly select a group member's work from each group to grade, and the grade will apply to everyone in the group. When you upload your Recitation Worksheet you should receive a submission

receipt from *Brightspace* confirming that the file uploaded properly. If you do not get such a confirmation, it means that the upload did not complete, and you must try again. Please preserve the submission confirmation you receive from *Brightspace*.

- DEADLINE & LATE POLICY FOR RECITATION: **Deadline**: **11:59 AM on SATURDAY** of the week of the Recitation. **Please follow directions in *Brightspace* on the FORMAT of the file(s) that must be uploaded, if not you will get ZERO points.**
  Late Policy: Lose 10 points if 0-6 hours late. Lose 20 points if 6-12 hours late. Lose ALL 30 points (get a 0 on the RECITATION) if 12 or more hours late.
- Rubrics for grading Recitation are provided in *Brightspace* and can be accessed at the link where you upload your Recitation for each week.
- There are a total of 13 recitations in the semester. At the end of the semester, the **ONE** lowest recitation score will be dropped for all students. **These drops will cover occasions for which you miss a RECITATION due to a brief illness, COVID-19/Quarantine, field trip, club sport event, internship, job fair, etc.**
- **There will NO MAKE UP for any of the RECITATIONS**. Completing the RECITATION at home without attending YOUR Recitation section is STRICTLY PROHIBITED. and if you do so it will be considered a violation of the Academic Dishonesty policy. If you miss a RECITATION for any reason, you are first required to use the allowed drops for any absence. However, **if you have already used up your allowed drops and have a valid reason for an absence**, you may request an exemption. Such exemptions, which will be very rare, will ONLY be made if you follow the procedure outlined in the **EXCUSED ABSENCE/ EXEMPTION/ EXTENSION** section in the Syllabus.

LAB: Weekly laboratory sessions meet for two hours (110 minutes) on most weeks (see *Course Schedule*)

- In the first week, you will complete your Lab 01 at home and upload it on *Brightspace* as per the deadline posted in the *Course Schedule.* There will be NO LAB MEETING in WEEK 01.
- The Lab worksheet will be posted in the appropriate week's folder within *Brightspace*. You are encouraged to look over the lab ahead of time so that you come to your lab section ready to work and ask questions. **Please download and go through the Lab Worksheet posted in *Brightspace* in the COURSE CONTENT > MODULE > WEEK > LAB folder, BEFORE your assigned LAB section time**.
- Starting **WEEK 02**, you are **REQUIRED** to attend **YOUR ASSIGNED** (by the Registrar) **LAB** section. Please **BRING A LAPTOP OR TABLET TO EACH LAB MEETING THAT IS ADEQUATELY CHARGED**. You will need this to complete the Lab before you leave. You will get 0 points for the LAB if you are more than 15 minutes late to you LAB session.
- You will work in groups of **up to three** people. You are free to form a group with anyone in your lab section, but you must remain in that group for the entire semester. At your first Lab meeting (Week 02), your TA will instruct you how to sign up for your group. The lab group will be different from the group you form in the Recitation section.
- Each member of the group must complete the Lab write up and upload their work to *Brightspace* in the appropriate assignment upload link. Your Lab instructor will randomly select a group member's work from each group to grade, and that grade will apply to everyone in the group. When you upload your Lab Worksheet you should receive a submission receipt from *Brightspace* confirming that the file uploaded properly. If you do not get such a confirmation, it means that the upload was not complete, and you have to try again. Please preserve the submission confirmation you receive from *Brightspace*.
- DEADLINE & LATE POLICY FOR LAB: **Deadline**: **11:59 PM on SATURDAY** of the week of the Lab. **Please follow directions in *Brightspace* on the FORMAT of the file(s) that must be uploaded, if not you will get ZERO points.**
  Late Policy: Lose 10 points if 0-12 hours late. Lose 20 points if 12-24 hours late. Lose 30 points if 24-36 hours late. Lose ALL 40 points (get a 0 on the LAB) if 36 or more hours late.
- Rubrics for grading Laboratory are provided in *Brightspace* and can be accessed at the link where you upload your Recitation for each week.
- There are a total of 13 labs in the semester. At the end of the semester, the **ONE** lowest lab score will be dropped for all students. **These drops will cover occasions for which you miss a LAB due to a brief illness, COVID-19/Quarantine, field trip, club sport event, internship, job fair, etc.**
- **There will NO MAKE UP for any of the LABS**. Completing the LAB at home without attending YOUR Lab section is STRICTLY PROHIBITED, and if you do so it will be considered a violation of the Academic Dishonesty policy. If you

miss a LAB for any reason, you are first required to use the allowed drops for any absence. However, **if you have already used up your allowed drops and have a valid reason for an absence**, you may request an exemption. Such exemptions, which will be very rare, will ONLY be made if you follow the procedure outlined in the **EXCUSED ABSENCE/ EXEMPTION/ EXTENSION** section in the Syllabus.

PROBLEM QUIZZES: There will be a total of **NINE** (9) Problem Quizzes to be **completed online within a 24-hour window**. After you start each Quiz, you will have **30 minutes** to complete the Quiz. Each Quiz will have **no more than 6 questions**. The scheduled times for these quizzes can be found in the *Course Schedule*. The purpose of these Problem Quizzes is to serve as feedback to the instructor and yourself as you move forward in the course and prepare for the exams. Specifically, these Problem Quizzes are to serve as a reflective assessment on how well you understand the current topics and problem-solving that you will need to have mastered for each of the exams.

- See *Course Schedule* for the week in which these Problem Quizzes will occur. Each Quiz will be based on LECTUREs, HOMEWORK and RECITATION from material covered *before the end of the week prior* to the Problem Quiz, and *after the previous Exam* (for Problem Quizzes after Exam 1)
- You will need access to a computer, laptop, or mobile device with reliable internet access to take the Problem Quiz. Do NOT attempt to take it on your cell phone as it will not display correctly.
- You may only take the Problem Quiz once within the 24-hour window. If you fail to complete the problem quiz, you will receive ZERO points for that quiz.
- In the spirit of learning and practicing for the exams, you may utilize your notes, textbook, calculator, and any other non-human assistance during the quiz. **You may NOT interact with anyone** (i.e., students, TAs, anyone else) **either face-to-face or via any other medium** (i.e., email, text, phone, social media etc.), **or access ChatGPT, Chegg, or any other solutions website during the Problem Quiz**. IF you do ANY of these, it will count as Academic Dishonesty, and you will face all consequences of violating the Purdue's Academic Honesty policy.
- There will be a total of **NINE** (9) Problem Quizzes. At the end of the semester, the **TWO** lowest Problem Quiz scores will be dropped for all students. **These drops will cover occasions for which you miss a PROBLEM QUIZ due to a brief illness, COVID-19/Quarantine, field trip, club sport event, internship, job fair, etc**
- **There will NO MAKE-UP for any of the PROBLEM QUIZZES**, as you are required to use the allowed drops for any absence. However, if you have already used up your allowed drop, you may request an extension. Such extensions, which will be very rare, will ONLY be made if you follow the procedure outlined in the **EXCUSED ABSENCE/ EXEMPTION /EXTENSION** section in the Syllabus.

MID-TERM EXAMS: There will be **TWO (2) Mid-Term Exams** throughout the semester. The dates, times, and locations of each exam are in the **EXAM DATES** section of this *Syllabus.*

- Each of the Mid-Term Exams will have up to **15 multiple-choice questions**, with a **duration of 60 minutes**. You **are NOT allowed** to use notes, textbooks, internet, or discuss with anyone (in any way) during the exams.
- A *PRACTICE EXAM* will be posted in *Brightspace* at least one week prior to each exam. Solutions will be provided at least four days prior to the exam along with tips for tweaking the practice exam problems. Please follow the directions in *Brightspace* to use these to study for the real exam.
- Only ***Non-Graphing Calculators*** may be used during exams. **IF DURING THE EXAM YOU ARE FOUND WITH A GRAPHING CALCULATOR, YOU WILL GET ZERO POINTS ON THAT EXAM**.
- **If you fail to provide correct, complete, readable information, EXACTLY AS PER THE INSTRUCTIONS PROVIDED ON YOUR EXAM, YOU WILL LOSE AT LEAST 10 POINTS FOR EVERY MISTAKE.**
- There will NO MAKE UP for any of the Mid-Term Exams unless excuse arrangements have been made with the Course Coordinator. Such arrangements will ONLY be made if you follow the procedure outlined in the **EXCUSED ABSENCE/ EXEMPTION/ EXTENSION** section in the Syllabus.
- Please follow instructions provided on *Brightspace* one week prior to each Exam.

FINAL EXAM: Completion of the comprehensive Final Exam is a requirement for passing the course. The date and time will be announced later in the semester. Do not make plans to leave campus before then. You **are NOT allowed** to use notes, textbook, internet, or discuss with anyone (in any way) during the final.

- Only ***Non-Graphing Calculators*** may be used on the Final Exams. **IF DURING THE FINAL YOU ARE FOUND WITH A GRAPHING CALCULATOR, YOU WILL GET ZERO POINTS ON THE FINAL**.
- **If you fail to provide correct, complete, readable, EXACTLY AS PER THE INSTRUCTIONS PROVIDED ON YOUR FINAL, YOU WILL LOSE AT LEAST 10 POINTS FOR EVERY MISTAKE.**
- Information about how the Final Exam will be administered will be provided on *Brightspace*.

COURSE COMPONENT WEIGHTAGE

COURSE COMPONENT	% OF TOTAL GRADE	TOTAL POINTS
LECTURES – 20 (LEC 01-03 do not count & *Lowest 5* of remaining 25 Lectures dropped)	**3.0%**	**60** pts (3 pts x 20 LECTs)
HOMEWORK (Wiley PLUS) – 20 (*Lowest 5* of 25 dropped)	**12.0%**	**240** pts (12 pts x 20 HWs)
RECITATION – 12 (*Lowest 1* REC of 13 dropped)	**21.0%**	**420** pts (35 pts x 12 RECs)
LABS – 12 (*Lowest 1* LAB of 13 dropped)	**24.0%**	**480** pts (40 pts x 12 LABs)
PROBLEM QUIZZES – 7 (*Lowest 2* of 9 dropped)	**17.5%**	**350** pts (50 pts x 7 QUIZs)
MID-TERM EXAMS – 2 (Two)*: 150 points each	15.0% } ***22.5%** Together	300 pts } ***450** pts Together
FINAL EXAM* -- 300 points	15.0%	300 pts
TOTAL FOR COURSE	**100%**	**2000 pts**

***EXAM POINTS Calculation: HIGHEST of THESE TWO NUMBERS will be 22.5% of your Course Grade:**

- **Highest** Mid-Term Exam Score (out of 150 pts.) + **Full** Final Exam Score (out of 300 pts)

OR

- **Both** Mid-Term Exam Scores (out of 300 pts.) + **One-Half** of Final Exam Score (out of 150 pts)

COURSE GRADE

Course grades will be assigned based on the total points (out of 2000) earned in the course. The cut off total points earned for each grade will be ***no higher than*** the ones listed in the list below:

TOTAL POINTS OUT OF 2000 (%) EARNED IN COURSE	COURSE GRADE
1940 (97%) or Above	A+
1860 (93%) – 1939	A
1800 (90%) – 1859	A-
1740 (87%) – 1799	B+
1660 (83%) – 1739	B
1600 (80%) – 1659	B-
1500 (75%) – 1599	C+
1400 (70%) – 1499	C
1300 (65%) – 1399	C-
1200 (60%) – 1299	D+
1100 (55%) – 1199	D
1000 (50%) – 1099	D-
999 or Below	F

It is your responsibility to ensure that the grades are accurate, and report this **at least 1 WEEK PRIOR to when the Course Grades are due** (see *Course Schedule* at end of this document).

HOW TO ESTIMATE YOUR STANDING IN THE COURSE?

After EXAM 2 we will post a column in *Brightspace* Grades titled "**NON-EXAM PROGRESS**". This will be a percentage, calculated using the current scores of Lectures, Labs, Recitations, and Homework. Then you can use this percentage as shown in the Example below to work out your estimated course grade. An email will be sent out to the class when this column is posted in *Brightspace*, including information on how it is calculated.

Please note that **this is just an estimate** based on the assumption that your performance on all assignments and assessments in the course that have yet to be completed will be the same as that on the corresponding previous assignment or assessment of the same component i.e. you will score the same on future HWs as you did on past HWs, you will score the same on future LABs as you did on past LABs, and so on. **The course coordinators, instructors or GTAs are NOT responsible for any incorrect assumptions or calculations that you might make about your estimated grade**.

We know from experience, the average for **NON-EXAM%** for the class is about **90%**. If you complete the Lectures, Homework, Recitation, Laboratory, and Problem Quizzes, you should be at the 90% level.

The **EXAMS** (**Mid-Terms + Final)** comprise the remaining 450 pts (22.5%) of your course grade.

Example: If your **NON-EXAM%** is 90% and your average on the **EXAMS%** is 70%, then a ***quick conservative estimate*** of your total points in this class is (90% of 1550) + (70% of 450) = 1710 points out of 2000. Based on the above table, your ***estimated*** final course grade would be a B. Again, this is ONLY an estimate.

INCOMPLETE

A grade of incomplete (I) will be given only in unusual circumstances. To receive an "I" grade, a written request must be submitted to the Course Coordinator by the last date of classes. The request must describe the circumstances, along with a proposed timeline for completing the course work. Submitting a request does not ensure that an "I" grade will be granted. If granted, you will be required to fill out and sign an "Incomplete Contract" form that will be turned in with the course grades. Any requests made after the course is completed will not be considered for an incomplete grade.

TEACHING PHILOSOPHY

As instructors, it is our responsibility to maximize opportunities for every student in the class to learn, grow, and succeed in reaching both my own outcomes for the course and their personal goals and desires related to the class. To meet this responsibility, we draw on pedagogical theory, frameworks, and practices rooted in principles of collaborative learning and student-faculty partnership. For some students, this may feel awkward. Much of our society's discussions about teaching focus on a banking system, in which an instructor deposits knowledge into a student's mind, and students receive, file, store, and ultimately return that information in the same format in which it was deposited. Instead, we focus on student learning, which we define as a process of individual change. This means developing skills to view the world in new ways, and engaging in problem solving, critical thinking, as well as different types of debates, discussions, and dialogues.

GETTING HELP

This course will require a significant amount of time and effort. When a topic is not understood, or if you are stuck on a particular problem, try some of the following options:

A) **HELP CENTER** is staffed by Graduate Teaching Assistants who are trained in this material. *The schedule for the Help Center Hours will be posted on Brightspace*. The location is **Room 290 PHYS**. Upon entering the Help Center, you will swipe your PUID in the card reader at the dedicated computer station near the HC entrance. Additional Help Center hours during exam weeks will be posted here: http://www.physics.purdue.edu/academic-programs/courses/help_center.html

B) Make arrangements to meet with either of the following instructors: Course Coordinators, Lecture Instructor, Recitation TA, or Lab TA. See any of these during office hours or make an appointment. We are happy to work to improve your understanding of the course content.

C) Supplemental Instruction (SI) study sessions are available for this course. These study groups are open to anyone enrolled in this course who would like to stay current with the course material and understand the material better. Attendance at these sessions is voluntary but extremely beneficial for those who attend weekly. Times and locations for the help sessions can be found here: http://www.purdue.edu/si or the free app: www.purdue.edu/boilerguide . Students who attend these interactive sessions will find themselves working with peers as they compare notes, demonstrate and discuss pertinent problems and concepts, and share study and test-taking strategies. Students are asked to arrive with their student ID card, lecture notes and questions to these informal, peer-led study sessions. Your SI Leaders will be announced shortly.

ATTENDANCE POLICY

This course follows Purdue's academic regulations regarding attendance, which states that students are expected to be present for every meeting of the classes in which they are enrolled. Attendance will be taken at the beginning of each class and lateness will be noted. When conflicts or absences can be anticipated, such as for many University-sponsored activities and religious observations, the student should inform the instructor of the situation as far in advance as possible. For unanticipated or emergency absences when advance notification to the instructor is not possible, the student should contact the instructor as soon as possible by email or phone. When the student is unable to make direct contact with the instructor and is unable to leave word with the instructor's department because of circumstances beyond the student's control, and in cases falling under excused absence regulations, the student or the student's representative should contact or go to the Office of the Dean of Students (ODOS) website to complete appropriate forms for instructor notification. Under academic regulations, excused absences may be granted **by ODOS** for cases of grief/bereavement, military service, jury duty, parenting leave, or emergent or urgent care medical care.

If you must miss class at any point in time during the semester, please reach out to me via Purdue email so that we can communicate about how you can maintain your academic progress. If you find yourself too sick to progress in the course, please notify your adviser and the Course Coordinator via email. We will decide based on your situation.

EXCUSED ABSENCES / EXEMPTIONS / EXTENSIONS

You **MAY** be eligible for an Excused Absence / Exemption / Extension, **IF** you can provide **SUPPORTING DOCUMENTED EVIDENCE** below:

- **ICLICKER LECTURE SESSIONS**: Starting LECTURE 04, you are allowed to drop up to **FIVE** (5) missed **I CLICKER LECTURES**. If you miss more than FIVE LECTURES due to an extended absence and have a legitimate reason as evidenced by the SUPPORTING DOCUMENTED EVIDENCE, you may request an exemption.
- **HOMEWORK**: You are allowed to drop up to **FIVE** (5) missed HOMEWORK. If you miss more than FIVE HOMEWORK assignments due to an extended absence and have a legitimate reason as evidenced by SUPPORTING DOCUMENTED EVIDENCE, you may request an extension.
- **RECITATIONS**: You are allowed to drop up to **ONE** (1) missed **RECITATION**. If you miss more than ONE RECITATION due to an extended absence and have a legitimate reason as evidenced by SUPPORTING DOCUMENTED EVIDENCE, you may request an exemption. No extensions can be requested as the Recitation Solutions are posted online.
- **LABS**: You are allowed to drop up to **ONE** (1) missed **LAB.** If you miss more than ONE LAB due to an extended absence and have a legitimate reason as evidenced by SUPPORTING DOCUMENTED EVIDENCE, you may request an extension (if you have attended the lab but failed to upload the lab assignment) or exemption (if you have been unable to attend the lab in person)
- **PROBLEM QUIZZES**: You are allowed to drop up to **TWO** (2) missed **PROBLEM EQUIZZES.** If you miss more than TWO PROBLEM QUIZZES due to an extended absence and have a legitimate reason as evidenced by SUPPORTING DOCUMENTED EVIDENCE, you may request an extension/exemption depending upon whether the Problem Quiz solutions have been made visible.
- **MID-TERM EXAMS**: **Extensions (i.e., Make-Up Exam) for Mid-Term Exam are given in VERY RARE circumstances**. Such requests will be highly scrutinized and will require a **Letter from the Office of Dean of Students** along with SUPPORTING DOCUMENTED EVIDENCE. If you can provide these materials, but are **unable to complete the Make-Up Exam within one week of the scheduled exam** then you will receive a score for your missed Mid-Term Exam, based on the following formula:

  Your Score on Missed Exam = Class Average on Missed Exam + (Your Score on Other Exam –Class Average on Other Exam)

  Please note that this process can only be used if you miss **AT MOST ONE** Mid-Term Exam. If you miss more than one Mid-Term Exam, and you have a valid reason as evidenced by SUPPORTING DOCUMENTED EVIDENCE, then you will receive a grade of INCOMPLETE in the course and you will have to make arrangements with the Course Coordinator to take all of the missed Mid-Term Exams at a later date.

- **FINAL EXAM**: If you have a valid reason (based on criteria for the Mid-Term Exams above) and evidenced by SUPPORTING DOCUMENTED EVIDENCE, that prevents you from taking the Final Examination, you will receive a

grade of Incomplete for the course and you will have to make arrangements with the Course Coordinators to take the Final Exam at a later date. **The Final Exam cannot be exempted under ANY CIRCUMSTANCES**.

SUPPORTING DOCUMENTED EVIDENCE: A **Letter from the Office of Dean of Students** supporting your absence (e.g., Medically Excused Absence, Quarantine Absence, Grief Absence etc.) **is the most preferred supporting documentation you can provide.** If you have such a letter, then you can attach that to your request and that will suffice, and you do not need to provide any of the documentation below. However, **if you do NOT have a Letter from the Office of Dean of Students**, then you can provide one of the pieces of evidence below as Supporting Documentation:

- In case of illness, go to the Purdue University Student Health Center (PUSH). You should receive a slip from the Center with the date, doctor's name, and a telephone number OR go to your private physician and obtain a written excuse. We only need the doctor to verify that your illness justifies your absence, NOT a diagnosis or any personal information.
- In case of accidents, funerals, etc., please provide a police accident report, funeral notice etc.
- In case of required attendance at an official Purdue sponsored event or activity, please provide a letter from the appropriate Purdue organizational unit to indicate that specifies that you are required to be present for a specific official Purdue sponsored event or activity. The following are **NOT** official Purdue activities: club sports, course field trips, attending a conference: club sports, course field trips, attending a conference.

FOLLOW THIS PROCEDURE IF YOU ARE REQUESTING AN EXEMPTION / EXTENSION ON A LECTURE, HOMEWORK, LAB, RECITATION, PROBLEM QUIZ, MID-TERM EXAM:

- Prepare a **COVER LETTER** clearly stating the following information (**Please download at template for this letter posted in *Brightspace* in the CONTENT** (top menu) **> COURSE INFO** (side bar) > **REQUESTING AN EXCUSED ABSENCE**. The following information is required in the COVER LETTER.
  - LAST NAME, First Name
  - PURDUE EMAIL
  - REASON FOR EXCUSED ABSENCE REQUEST: Briefly state **WHY** you are requesting an excused absence (Attach **SUPPORTING DOCUMENTED EVIDENCE** above)
  - DATES OF ABSENCE
  - LIST OF ASSIGMENTS for which an excused absence is requested. **NOTE**: You must state the exact # of the Lab, Recitation, HW etc. that you miss, e.g., LAB 04, REC 05 etc. It is not adequate to simply provide the date or week in which you missed the assignments.
  - LAB SECTION & TA (if an excused LAB absence is requested)
  - RECITATION SECTION & TA (if an excused RECITATION absence is requested).
- Attach to the letter the **SUPPORTING DOCUMENTED EVIDENCE**.
- **COMBINE** the COVER LETTER with the SUPPORTING DOCUMENTED EVIDENCE into a **SINGLE PDF FILE**.
- UPLOAD this SINGLE PDF FILE using the link in the ***Brightspace* in the CONTENT** (top menu) **> COURSE INFO.** (side bar) **> REQUESTING AN EXCUSED ABSENCE**. **PLEASE NOTE: DO NOT SEND THIS LETTER AS AN EMAIL ATTACHMENT. WE CANNOT ACCEPT SUCH LETTERS VIA EMAIL**.

ACCOMMODATIONS

If you receive notification from the Dean of Students that you are entitled to accommodation, supported by a DRC Letter, please inform your Course Coordinators. They will then confirm that they have received notification from DRC regarding your accommodation. You will be contacted regarding the exam accommodation.

CLASSROOM GUIDANCE REGARDING PROTECT PURDUE

Any student who has substantial reason to believe that another person is threatening the safety of others by not complying with Protect Purdue protocols is encouraged to report the behavior to and discuss the next steps with their instructor. Students also have the option of reporting the behavior to the Office of the Student Rights and Responsibilities. See also Purdue University Bill of Student Rights and the Violent Behavior Policy under University Resources in *Brightspace*.

ACADEMIC INTEGRITY

Purdue's Honor Pledge: "As a Boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue."

Any effort to represent somebody else's work as your own, or allowing your work to represent somebody else's, is cheating. Working with another student on your Recitation, Lab, or Homework is NOT cheating and, in fact, is encouraged. However, having somebody else do your work IS cheating.

If a student is found cheating, they will receive an F for the course and be reported to the Dean of Students. In serious cases the Dean may suspend or expel the student from the University.

Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information is submitted the greater the opportunity for the university to investigate the concern. Please see the course *Brightspace* page under University Policies.

NON DISCRIMINTATION STATEMENT

Purdue University is committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life. A hyperlink to Purdue's full Nondiscrimination Policy Statement is included in our course *Brightspace* under University Policies.

EXPECTATIONS REGARDING RESPECT FOR OTHERS

At Purdue, you will come into contact with many people who appear very different from you. Beyond superficial physical differences, members of our Purdue community may hold opinions with which you may disagree and may be very different from you along the infinite number of human dimensions. These physical, intellectual and cultural differences offer the opportunity to learn and enrich your experiences as a student and a human being. Our expectation of you as a member of Purdue and of the larger global community, is that you will at all times show respect for others. Learning how to do so is but one component of your personal growth and one way in which you, together with the rest of our community, can create a more inclusionary environment. It is your obligation as an individual with the privilege to attend an institution of higher learning to engage with others in respectful ways.

Purdue University is committed to providing a safe and secure campus environment for members of the university community. Purdue strives to create an educational environment for students and a work environment for employees that promote educational and career goals. Violent Behavior impedes such goals. Therefore, Violent Behavior is prohibited in or on any University Facility or while participating in any university activity. See the Student Widget on our course *Brightspace* for more information on the Violent Behavior Policy.

MENTAL HEALTH/WELLNESS STATEMENT

If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try WellTrack**.** Sign in and find information and tools at your fingertips, available to you at any time.

If you need support and information about options and resources, please contact or see the Office of the Dean of Students. Call 765-494-1747. Hours of operation are M-F, 8 am- 5 pm.

If you find yourself struggling to find a healthy balance between academics, social life, stress, etc., sign up for free one-on-one virtual or in-person sessions with a Purdue Wellness Coach at RecWell. Student coaches can help you navigate through barriers and challenges toward your goals throughout the semester. Sign up is free and can be done on BoilerConnect.

If you're struggling and need mental health services: Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of mental health support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at 765-494-6995 during and after hours, on weekends and holidays, or by going to the CAPS office on the second floor of the Purdue University Student Health Center (PUSH) during business hours. The CAPS website also offers resources specific to situations such as COVID-19.

BASIC NEEDS SECURITY

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. There is no appointment needed and Student Support Services is available to serve students 8 a.m.-5 p.m. Monday through Friday. Students may submit requests for emergency assistance from the Critical Need Fund

EMERGENCY PREPAREDNESS

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Relevant changes to this course will be posted onto the course website or can be obtained by contacting the instructors or TAs via email or phone. You are expected to read your @purdue.edu email on a frequent basis.

CHANGES TO COURSE DUE TO MAJOR CAMPUS EMERGENCY

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances. Course information will, in general, be disseminated via one or more of the following routes: lecture, recitations, labs, email, and *Brightspace*.

CONFLICTS

In case of examination conflicts (exams scheduled for the same student at the same time), similar to final examinations, students faced with a direct exam conflict are entitled to reschedule either examination. It is the responsibility of the student to make the request for the necessary arrangements at least one week before the scheduled exam. Course instructors shall not penalize a student who chooses to reschedule an examination under these options. In the event the student is unable to reach an agreement with the course instructors to reschedule one of the exams, the student will contact the Office of the Registrar; the Registrar will make the final decision as to which exam is to be rescheduled and offered at an alternate time; the Registrar will communicate this decision to the course instructor and relevant Department Head.

In case of examination conflicts with a scheduled evening course, the conflict should be resolved by the instructors, provided that the student informs them of the conflict at least a week before the exam. If the instructors cannot resolve the conflict, the scheduled evening course takes priority. The examination instructor must offer an alternative time for their exam.

Other conflicts should be resolved between the instructor and the student. Reasons for conflict should be taken under careful and reasonable consideration by the instructor and student. If conflict resolution is not possible, the examination shall take precedence, subject to appeal through the head of the department in which the course is offered.

ACCESSIBILITY

Purdue University strives to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, you are welcome to let me know so that we can discuss options. You are also encouraged to contact the Disability Resource Center at: drc@purdue.edu or by phone: 765-494-1247.

Students with disabilities must be registered with Disability Resource Center (DRC) (drc@purdue.edu) in the Office of the Dean of Students before classroom accommodations can be provided. If you are eligible for academic accommodation because you have a documented disability that will impact your work in this class, please schedule an appointment with me as soon as possible to discuss your needs.

Purdue University is committed to making learning experiences accessible. If you anticipate or experience physical or academic barriers based on disability, you are welcome to let me know so that we can discuss options. You are also encouraged to contact the Disability Resource Center at: drc@purdue.edu or by phone: 765-494-1247.

COURSE EVALUATION STATEMENT

During the last two weeks of the semester, you will be provided with an opportunity to give feedback on this course and your instructor. Purdue uses an online course evaluation system. You will receive an official email from evaluation administrators with a link to the online evaluation site. You will have up to 13 days to complete this evaluation. Your participation is an integral part of this course, and your feedback is vital to improving education at Purdue University. I strongly urge you to participate in the evaluation system.

COPYRIGHT

Online educational environments, like all learning environments, should provide opportunities for students to reflect, explore new ideas, post opinions openly, and have the freedom to change those opinions over time. Students enrolled in and instructors working in online courses are the authors of the works they create in the learning environment. As authors, they own the copyright in their works subject only to the university's right to use those works for educational purposes (Visit Purdue University Copyright Office). Students may not copy, reproduce, or post to any other outlet (e.g., YouTube, Facebook, or other open media sources or websites) any work in which they are not the sole or joint author or have not obtained the permission of the author(s).

CHANGES TO SYLLABUS AND SCHEDULE

The *Course Coordinator* reserves the right to make changes to this *SYLLABUS* and/or *SCHEDULE* for the course. Any changes will be posted on *Brightspace,* and you will receive an email informing you of the changes.

COURSE SCHEDULE

	WEEK	READ SECTIONS IN TEXT	HOMEWORK *(WileyPLUS) DUE @ 11:59pm*	LECTURES *(Weekly Lectures are Tues. & Thurs. in PHYS 114 unless specified otherwise)*	LAB
1	RECITATION 01 – Position Vectors – DUE 11:59 **AM** SATURDAY (08/26)				LAB 01: DUE 11:59 **PM** SATURDAY (08/26)
	Aug 21 – 25	1.1-1.5	HW 01 (Due 08/25, Fri.)	1. Matter & Interactions	
		1.5-1.11	HW 02 (Due 08/30, Wed.)	2. Momentum & Position Update	
2	RECITATION 02 – Velocity Vectors – DUE 11:59 **AM** SATURDAY (09/02)				LAB 02: DUE 11:59 **PM** SATURDAY (09/02)
	Aug 28 – Sept 01	2.1-2.6	HW 03 (Due 09/01, Fri.)	3. The Momentum Principle	
		2.7-2.8 3.1-3.4	HW 04 (Due 09/06, Wed.)	4. Predicting Motion & Fundamental Interactions	
3	RECITATION 03 – Interactions – DUE 11:59 **AM** SATURDAY (09/09)				LAB 03: DUE 11:59 **PM** SATURDAY (09/09)
	Sept 04 – 08	3.5-3.17	HW 05 (Due 09/08, Fri.)	5. Fundamental Interactions	**PROBLEM QUIZ 1** (Duration 30 min.) Take Online Anytime 12:01AM – 11:59PM, TUESDAY, **SEPT. 05**
		4.1-4.8	HW 06 (Due 09/13, Wed.)	6. Model of Solids	
4	RECITATION 04 – Predicting Motion – DUE 11:59 **AM** SATURDAY (09/16)				LAB 04: DUE 11:59 **PM** SATURDAY (09/16)
	Sept 11 – 15	4.9-4.15	HW 07 (Due 09/15, Fri.)	7. Sound & Pressure	**PROBLEM QUIZ 2** (Duration 30 min.) Take Online Anytime 12:01AM – 11:59PM, MONDAY, **SEPT. 11**
		5.1-5.6	HW 08 (Due 09/20, Wed.)	8. Rate of Change of Momentum – I	
5	RECITATION 05 – Rate of Change of Mom. – DUE 11:59 **AM** SATURDAY (09/23)				LAB 05: DUE 11:59 **PM** SATURDAY (09/23)
	Sept 18 - 22	5.1-5.6	HW 09 (Due 09/22, Fri.)	9. Rate of Change of Momentum – II	**PROBLEM QUIZ 3** (Duration 30 min.) Take Online Anytime 12:01AM – 11:59PM, MONDAY, **SEPT. 18**
		5.7-5.10	HW 10 (Due **09/25**, **MONDAY**.)	10. Circular Motion	
6	**EXAM 1: 6:30 – 7:30 PM, TUESDAY, 09/26.** LOCATION: ELLIOTT HALL				LAB 06: DUE 11:59 **PM** SATURDAY (09/30)
	RECITATION 06 – Energy Principle I – DUE 11:59 **AM** SATURDAY (09/30)				
	Sept 25 – 29	--	HW 11 (Due **10/01, SUN**.)	**NO LECTURE** due to EXAM 1	
		6.1-6.4	HW 12 (Due 10/04, Wed.)	11. Work & Kinetic Energy	

	WEEK	READ SECTIONS IN TEXT	HOMEWORK *(WileyPLUS) DUE @ 11:59pm*	LECTURES *(Weekly Lectures are Tues. & Thurs. in PHYS 114 unless specified otherwise)*	LAB
7	RECITATION 07 – Energy Principle II – DUE 11:59 **AM** SATURDAY (10/07)				LAB 07: DUE 11:59 **PM** SATURDAY (10/07)
	Oct 02 – 06	6.5-6.8	No HW	12. Rest Energy, Grav. Potential Energy	**PROBLEM QUIZ 4** (Duration 30 min.) Take Online Anytime 12:01AM – 11:59PM, MONDAY, **OCT. 02**
		6.9-6.14	HW 13 (Due 10/11, Wed.)	13. Elect. Pot. Energy, Energy vs Separation	
8	***NO RECITATION – Fall Break***				***NO LAB – Fall Break***
	Oct 09 – 13		No HW	**NO LECT. – Fall Break**	
		7.1-7.8	HW 14 (Due 10/13, Fri.)	14. Energy of Neutral Atoms, Internal Energy, Power, Open & Closed Systems	
9	RECITATION 08 – Systems with Internal Energy – DUE 11:59 **AM** SAT. (10/21)				LAB 08: DUE 11:59 **PM** SATURDAY (10/21)
	Oct 16 – 20	7.10-7.12	HW 15 (Due 10/18, Wed.)	15. Energy Dissipation, Resonance	**PROBLEM QUIZ 5** (Duration 30 min.) Take Online Anytime 12:01AM – 11:59PM, MONDAY, **OCT. 16**
		9.1-9.2	HW 16 (Due 10/20, Fri.)	16. Multiparticle System Energy, Rotational Kinetic Energy	
10	RECITATION 09 – Real & Point Particle Systems – DUE 11:59 **AM** SAT. (10/28)				LAB 09: DUE 11:59 **PM** SATURDAY (10/28)
	Oct 23 – 27	9.3	HW 17 (Due 10/25, Wed.)	17. Comparing Two Models of a System	**PROBLEM QUIZ 6** (Duration 30 min.) Take Online Anytime 12:01AM – 11:59PM, MONDAY, **OCT. 23**
		10.1-10.11	HW 18 (Due 10/27, Fri.)	18. Collisions & Scattering (Lecture NOT on Exam 2)	
11	**EXAM 2: 8:00 – 9:00 PM, MONDAY, 10/30.** LOCATION: ELLIOTT HALL				LAB 10: DUE 11:59 **PM** SATURDAY (11/04)
	RECITATION 10 – Collisions – DUE 11:59 **AM** SATURDAY (11/04)				
	Oct 30 – Nov 03	--	No HW	**NO LECTURE** due to EXAM 2	
		11.1-11.3	HW 19 (Due 11/03, Fri.)	19. Angular Momentum	
12	RECITATION 11 – Angular Mom. – I – DUE 11:59 **AM** SATURDAY (11/11)				LAB 11: DUE 11:59 **PM** SATURDAY (11/11)
	Nov 06 – 10	11.4-11.7	HW 20 (Due 11/08, Wed.)	20. Angular Momentum – Zero Torque	**PROBLEM QUIZ 7** (Duration 30 min.) Take Online Anytime 12:01AM – 11:59PM, MONDAY, **NOV. 06**
		11.8-11.11	HW 21 (Due 11/10, Fri.)	21. Angular Momentum –Non-Zero Torque	

	WEEK	READ SECTIONS IN TEXT	HOMEWORK *(WileyPLUS) DUE @ 11:59pm*	LECTURES *(Weekly Lectures are Tues. & Thurs. in PHYS 114 unless specified otherwise)*	LAB
13	RECITATION 12 – Angular Mom. – II – DUE 11:59 **AM** SATURDAY (11/18)				LAB 12: DUE 11:59 **PM** SATURDAY (11/18)
	Nov 13 – 17	11.8-11.11	HW 22 (Due 11/15, Wed.)	22. Angular Mom. II	**PROBLEM QUIZ 8** (Duration 30 min.) Take Online Anytime 12:01AM – 11:59PM, MONDAY, **NOV. 13**
		11.8-11.11	HW 23 (Due 11/17, Fri.)	23. Angular Mom. III	
14	***NO RECITATION*** – **THANKSGIVING BREAK**				***NO LAB***
	Nov 20 – 24	11.1-11.11	No HW	24. Angular Mom. III	
		--	No HW	**NO LECTURE – Thanksgiving Break**	
15	RECIT. 13 – Applying All Three Principles – DUE 11:59 **AM** SATURDAY (12/02)				LAB 13: DUE 11:59 **PM** SATURDAY (12/02)
	Nov 27 – Dec 01	8.1-8.10	HW 24 (Due 11/29, Wed.)	25. Energy Quantization	**PROBLEM QUIZ 9** (Duration 30 min.) Take Online Anytime 12:01AM – 11:59PM, MONDAY, **NOV. 27**
		1.1-11.11	HW 25 (Due 12/01, Fri.)	26. Review Lecture	
16	***NO RECITATION (Quiet Period)***				***NO LAB (Quiet Period)***
	Dec 04 – 08	1.1-11.11	No HW	27. Review Lecture	
		1.1-11.11	No HW	28. Review Lecture	
17	***FINAL EXAM*:** **3:30-5:30 PM, MONDAY, DECEMBER 11, ELLIOTT HALL** **Please DO NOT make plans to leave campus before the Final Exam**				

GRADES DUE: 5:00 PM ET, TUESDAY, DECEMBER 19