

ME 274 Fall 2025

Basic Course Information

Course Title

ME 274 — Basic Mechanics II

Course Meeting and Instructor

Section	Instructor	Time	Location
001	Prof. Tina Han	MWF 12:30-13:20	WL HAMP 1144
002	Prof. Clark Addis	MWF 14:30-15:20	WL HAMP 1144
008	Prof. Christian Silva	MWF 10:30-11:20	WL ME G061
009	Prof. Charles Schwartz	MWF 10:30-11:20	INDY ET 202

Instructor Contact and Office Hours

Instructor	Email	Office Hour	OH Location
Prof. Tina Han	han547@purdue.edu	MWF 13:30-14:30	WL ME 2142
Prof. Clark Addis	caddis@purdue.edu	MW 15:30-16:20	WL ME 2142
Prof. Christian Silva	cesilva@purdue.edu	MWF 9:00-10:00	WL ME 2125
Prof. Charles Schwartz	schwa158@purdue.edu	M 14-15:30 R 14:30-16	IND EL 104

Teaching Assistants

Name	Email	Location
Prithvi Naresh Chandiramani	pchandir@purdue.edu	WL
Timir Rajendra Patel	pate1401@purdue.edu	WL
Falak Mandali	fmandali@purdue.edu	WL
Fermin Redondo	fredondo@purdue.edu	WL
Farshad Samadpour	fsamadpo@purdue.edu	INDY

Tutorial Room (INDY): EL 104

Day	Time	TA/ Instructor
Monday	14:00-15:30	Prof. Schwartz
Tuesday	13:30-16:30	Farshad
Thursday	14:30-16:00	Prof. Schwartz

Tutorial Room (WL): ME 2142

Time	Monday	Tuesday	Wednesday	Thursday	Friday
09:30-10:20	Falak		Prithvi		Falak
10:30-11:20	Falak		Prithvi		Falak
11:30-12:20	Falak		Fermin		Falak
12:30-13:20			Fermin		Fermin
13:30-14:20	Prof. Han	Fermin	Prof. Han	Timir	Prof. Han
14:30-15:20	Fermin	Fermin	Falak	Timir	
15:30-16:20	Prof. Addis	Fermin	Prof. Addis	Prithvi	
16:30-17:20	Prithvi	Fermin	Falak	Prithvi	

Course Textbook

- *Dynamics: A Lecturebook* can be purchased from the University Bookstore. It is strongly recommended to buy the course textbook.

Course Prerequisites

- ME 270 — Basic Mechanics I
- MA 262 — Linear Algebra and Differential Equations (co-requisite)

Course Description

Particle kinematics (both 2D and 3D motion, including moving reference frame descriptions for each). Particle kinetics including Newton's Laws, work/energy and impulse/momentum. Planner kinetics of rigid bodies and principles of energy and momentum. Introduction to linear vibrations with emphasis on single-degree-of-freedom systems.

Course Objectives

- Interpret Newton's Laws of Motion and apply them to engineering systems;
- use conservation principles (work-energy, impulse/momentum, and angular impulse-momentum) and apply them to engineering systems;
- demonstrate the modeling and evaluation of the response of second order linear mechanical systems; and
- develop a mastery of a systematic approach to problem solving.

Course Management

- **Course blog** will be used to host all the course material that is uniform across different sections including but not limited to example videos, homework questions and solutions as well as homework discussions and etc. The course blog website can be found here [Course blog](#)

- **Gradescope** is used for all homework assignment submissions.
- **iClicker** might be used for in-class participation depends on instructor.
- **Brightspace** might be used depends on instructor.

Course Grading

Your course grade will be based on a straight grading scale: 97-100% A+; 93-97% A; 90-93% A-; 87-90% B+; 83-87% B; 80-83% B-; 77-80% C+; 73-77% C; 70-73% C-; 67-70% D+; 63-67% D; 60-63% D-; <60% F.

- **Exams [25%] each:** There will be two one-hour closed book exams held in-person during university assigned time slots. All equations will be provided for the exams. Exams will be scanned and uploaded to Gradescope by individual students at the end of the exam and paper copies will be collected afterwards. No make-up exams will be scheduled. If a university approved excuse is communicated with proper documentation ahead of time, the grade received on the final examination will also be used for the missed exam.
- **Final Exam [35%]:** A two-hour closed book comprehensive final exam will be administered during the final exam period assigned by university. All equations will be provided for the exams. Exam will be scanned and uploaded to Gradescope by individual students at the end and paper copies will be collected afterwards.
- **Homework [10%]:** Homework sets consist of full length questions and concept questions. Full length questions are graded on effort of not the accuracy of the final results. Concept questions will be graded on accuracy. Homework solutions will be posted right after the due date for individual students to correct their work, and thus no late work will be accepted. The lowest homework grade will be dropped at the end of the semester.
- **Pop Quizzes and Class Participation [5%]:** Class participation is assessed by in class questions via iClicker or pop quizzes passed out during lecture. Phone/tablet/laptop with location services turned on is needed to answer the questions on iClicker, but are not permitted during written pop quizzes. These questions are only graded based on completion, full points will be awarded as long as honest attempts are made. The lowest 9 will be dropped (this means 3 weeks of class!).
- **Extra Credit:** There will be extra credit opportunities throughout the semester announced by your instructor.

Professionalism

- This course is a professional setting and students are expected to act accordingly.
 - During lectures, students should be paying attention in class and refraining from using their electronics for non-class-related purposes.
 - When communicating via email, students should be clear and concise, adhering to proper etiquette, and only reaching out after they have made an effort to find answers on their own. To ensure a prompt response, any e-mail communication should start with "ME 274 - Question". If such email arrives late on a Friday, the sender should expect a reply by Monday.

- Regrade requests must include well-reasoned justifications rather than a mere desire for more points or being close to the grade bump limit; grade grubbing will not be tolerated. The final grade calculation will account for rounding, always in the students' favor, so any requests for grade bumps or other forms of unfair treatment will not be considered.
- Out of respect to peers that arrive on time to class and the instructor, students are not expected to arrive late as the door opening and walking by is distracting for everyone. As stated previously, at this stage of your careers, students should act with professionalism and maturity.

Collaboration, AI, and Academic Integrity

Students are encouraged to work together in learning the course material (including homework). However, submitted homework solutions should be student's individual work and not copied from other sources. Copying solutions from other sources will be considered to be a serious offense in this course. Please see instructor if there are uncertainty about the difference between collaborating and copying.

Usage of services such as Chegg, Course Hero, Quizlet, etc. for unauthorized help (including, but not limited to, accessing online cheating services) is a violation of class policy. The consequences of not following the course policy on this include a lowering of course grade up through possible expulsion from the University. Suspect use cases will be submitted to the Office of the Dean of Students and, if copyright infringement is involved, to appropriate legal counsel.

You may use AI tools to review concepts, generate practice problems, or brainstorm ideas. Do not copy AI output into graded work. All submitted work must reflect your own reasoning. If you use AI for homework, briefly acknowledge it (e.g., "consulted ChatGPT for clarification on problem setup, then solved independently"). You should be able to explain and defend your solution at any time. Remember: exams, future courses, and your career depend on your ability to solve problems without AI. Consequences will follow the Purdue's policies on academic dishonesty, which may include grade penalties, course failure, or more severe disciplinary actions.

The instructors are strong believers that the mission of the university can only be fulfilled in an environment of high academic integrity. Students are encouraged to review the University's policies on academic integrity, which is located at this website. In addition, the Purdue University Honor Pledge is located here. Suspected cases of academic integrity violations will be reported directly to the Dean of Students.

Always keep in mind:

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

Nondiscrimination Statement

Purdue University is committed to maintaining a community which 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.

Accessibility

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.

Mental Health/Wellness Statement

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.

Disclaimer

This document is subject to change during the semester when deemed necessary.

Course Schedule

Midterm Exam 1 on 10/01, 8-9pm, covers Chapter 1-2, HW 01-04. Location TBA

Midterm Exam 2 on 11/04, 8-9pm, covers Chapter 3-4, HW 05-08. Location TBA

Final Exam. Location and time TBA

Green Text Notes HW publication

Red Text Notes HW due

	Monday	Wednesday	Friday
week 1	08/25 HW 01 Overview and Ch 0	08/27 1.A Cart. Description	08/29 1.A Path Description
week 2	09/01 – (Labor Day)	09/03 HW 02 HW 01 1.A Polar Description	09/05 1.C Joint Description
week 3	09/08 HW 03 1.D Rel. and Const. Mo.	09/10 HW 02 Ch 1 Review	09/12 2.A Rigid Bodies
week 4	09/15 HW 04 2.A Rigid Bodies	09/17 HW 03 2.B Instant Center	09/19 Ch 2 Review
week 5	09/22 HW 05 3.A Mov. Ref. Frames 2D	09/24 HW 04 3.A Mov. Ref. Frames 2D	09/26 3.B Mov. Ref. Frames 3D
week 6	09/29 3.B Mov. Ref. Frames 3D	10/01 – (Exam 1 Today)	10/03 4.A Newton's Law
week 7	10/06 HW 06 4.A Newton's Law	10/08 HW 05 4.B Work Energy	10/10 4.B Work Energy
week 8	10/13 – (October Break)	10/15 HW 07 HW 06 4.C Linear Imp. Mom.	10/17 4.C Linear Imp. Mom.
week 9	10/20 HW 08 4.C Central Impact	10/22 HW 07 4.D Angular Imp. Mom.	10/24 4.D Angular Imp. Mom.
week 10	10/27 HW 09 Ch 4 Review	10/29 HW 08 5.A Newton Euler Eqs.	10/31 5.A Newton Euler Eqs.
week 11	11/03 5.B Work Energy	11/05 – (Exam 2 on Tue. 11/04)	11/07 5.B Work Energy
week 12	11/10 HW 10 5.C Impulse Momentum	11/12 HW 09 5.C Impulse Momentum	11/14 Ch 5 Review
week 13	11/17 HW 11 6.A Equations of Motion	11/19 HW 10 6.B Free Undamped Res.	11/21 6.B Free Damped Res.
week 14	11/24 6.B Free Damped Res.	11/26 – (Thanksgiving)	11/28 – (Thanksgiving)
week 15	12/01 6.C Harmonic Res.	12/03 HW 11 6.C Harmonic Res.	12/05 Ch 6 Review
week 16	12/08 Course Review	12/10 Course Review	12/12 Course Review