

UNIVERSITY OF VERMONT

Department of Physics

Physics 11

Fall 2022

General Information

Instructor: Jason Pepe, Innovation Hall 231

Phone: 656-8865

email: Jason.Pepe@uvm.edu

Office Hours: Mon, Wed 10:45-11:45 or by appointment

Materials:

- *Textbook:* "College Physics" by Knight, Jones & Field, 4th Edition, with MasteringPhysics registration code and etext.
- *Learning Catalytics:* a software extension of MasteringPhysics that will be used to deliver question and answer, tutorial, or simulation exercises
- Pocket calculator with trigonometric functions, scientific notation and exponential functions.
- Smartphone, Tablet or Laptop (laptop preferred): You will need a device that can support a web browser to participate in Learning Catalytics exercises and MasteringPhysics assignments.

Course format:

- Three 50-minute meetings per week on Mondays, Wednesdays, Fridays and one 75-minute meeting on Tuesdays, Innovation E330. In contrast to traditional lectures, this course follows a flipped classroom model in which students spend most of their class time working through hands-on and group activities facilitated by the instructor and teaching assistants. Some of these activities include conceptual tutorials, analytical and numerical problem solving, computational simulations, and hands-on experiments. In this format, students are expected to prepare for class by completing assigned readings and pre-flight activities, including watching videos, short assignments, and/or quizzes. Selected homework problems to be completed after class will be assigned to consolidate the students' knowledge, while balancing the additional time needed to complete the pre-class activities.

Homework:

Homework problems serve as illustrations of the course material and are essential towards consolidation of the students' grasp of physical principles. The course outline shows the homework assignments for each chapter.

Mastering Physics Homework Quizzes and Pre-Lectures:

On most weeks, there will be a Mastering Physics online homework quiz. Late Mastering Physics assignments will not be accepted. There will be no make up quizzes. In addition to the homework quizzes, a Mastering Physics pre-lecture assignment for each chapter will be given.

Mastering Physics course identification: pepe93031

Section A (8:30 MWF 8:30 T meetings):

Examinations:

There will be three midterm exams based on class material, Learning Catalytics exercises, homework, and textbook material. An equation sheet will be provided for each exam. There will also be a comprehensive final exam.

Course Grades:

For each student, a score will be computed based on 100 percentage points to be distributed as follows:

- Hourly exams: $3 \times 11 = 33\%$
- MasteringPhysics prelectures: 9%
- Learning Catalytics: 26%
- MasteringPhysics Homework Quizzes: 16%
- Final examination: 16%

Numerical to Letter Grade Conversion:

Letter grades will be assigned as follows:

A range = 90 - 100

B range = 80 - 89

C range = 70 - 79

D range = 60 - 69

F = below 60

Attendance:

Students are expected to attend all classes and participate in group activities. A student's attendance record provides additional information for assessing a student's

overall attitude in the course. It will be used for advising, for documentation in a letter of reference, etc. It is the student's responsibility to keep up with missed material, announcements, etc.

Excuses:

Circumstances beyond a student's control may warrant an absence. Valid excuses for such absences are notes from the academic dean, the attending physician, the team coach, the officiating clergyman, the presiding judge, the arresting officer, etc.

Missing Hourly Exams:

Missing a midterm exam will result in a score of zero unless the student has a valid excuse as defined above. A student with a valid excuse may be given a make-up exam at a time that is mutually convenient for the student and the instructor.

Missing the Final:

Missing the final examination will result in a final course grade of F unless the student has arranged with the instructor through the appropriate academic dean for an "Incomplete."

Extra Credit: Extra credit work will not be assigned for the course.

Schedule of Meetings**STUDENTS MUST READ APPROPRIATE TEXTBOOK SECTIONS BEFORE CLASS.**

Aug 29, 30	Chapter 1: Representing Motion Questions: 2,4,13 Problems: 2,9,12,22,24,35,43,65,70,75
Aug 31 Sept 2, 6	Chapter 2: Motion in One Dimension Q: 4,5,8 P: 3,14,18,24,28,30,32,39,52,61,78,81
Sept 7, 9, 12, 13	Chapter 3: Vectors and Motion in Two Dimensions Q: 6,11,17 P: 1,10,17,28,33,43,47,48,61,63,66,71
Sept 14, 16	Chapter 4: Forces and Newton's Laws of Motion Q: 6,7,9 P: 5,10,15,20,24,33,34,43,45,52,58,65
Sept 19, 20, 21	Chapter 5: Applying Newton's Laws Q: 9,14,21 P: 4,5,20,25,26,28,33,43,46,75,79,82
Sept 28	EXAM I - Chapters 1,2,3,4,5 – 6:40 pm
Sept 23, 27, 28	Chapter 6: Circular Motion, Orbits, and Gravity Q: 2,7,11,14 P: 7,8,14,23,24,26,33,37,39,41,48,64,65,66,67
Sept 30 Oct 3, 4	Chapter 7: Rotational Motion Q: 7,18,22 P: 4,12,22,23,33,35,40,54,64,65,71,76
Oct 5, 7	Chapter 8: Equilibrium and Elasticity Q: 1,5,10 P: 5,6,11,23,25,47,52,67,68,53,60,66
Oct 10, 11, 12	Chapter 9: Momentum Q: 8,17,20 P: 5,17,20,27,39,40,43,65,66,72,73,75
Oct 19	EXAM II - Chapters 6,7,8,9 – 6:40 pm
Oct 18, 19, 21, 24	Chapter 10: Energy and Work Q: 1,20,23 P: 1,15,21,33,38,39,41,45,80,83,84,89
Oct 25, 26, 28	Chapter 11: Using Energy Q: 12,21,27 P: 1,5,13,17,28,35,39,41,46,49,55,61
Oct 31	Chapter 12: Thermal Properties of Matter Q: 12,25,26 P: 3,12,17,31,35,38,45,57,59,61,64,77

Nov 1, 2, 4	
Nov 9	EXAM III - Chapters 10,11,12 – 6:40 pm
Nov 8, 9, 11, 14	Chapter 13: Fluids Q: 5,15,16,21 P: 3,13,20,23,27,31,33,35,39,55,56,58
Nov 15, 16, 18, 28	Chapter 14: Oscillations Q: 13,14,22 P: 3,4,13,14,19,23,24,29,35,46,60,61,65
Nov 29, 30 Dec 2	Chapter 15: Traveling Waves and Sound Q: 6,13,16 P: 1,19,22,24,30,32,36,41,44,47,54,58,61
Dec 5, 6	Chapter 16: Superposition and Standing Waves Q: 4,12,15 P: 1,10,16,18,19,24,26,30,31,33,37,43,45,57
Dec 7, 9	Summary - Course Evaluation; Final Review
Dec 12	Final Exam – TBA