

UNIVERSITY OF VERMONT

Department of Physics

Physics 12

Spring 2021

General Information

Instructor: Jason Pepe, Innovation Hall 231

Phone: 656-8865

email: Jason.Pepe@uvm.edu

Office Hours: (via Teams) Mon, Wed 11:00-12:00 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
- *Microsoft Teams:* software available for free (UVM has a license) that we will use to communicate during synchronous class meetings
- *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 Microsoft Teams meetings, Learning Catalytics exercises, and MasteringPhysics assignments.

Course format:

- Three 50-minute synchronous online meetings per week on Mondays, Wednesdays, Fridays and one 75-minute synchronous online meeting on Thursdays, all via Microsoft Teams. 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. The lowest score will be dropped from the record. In addition to the homework quizzes, a Mastering Physics pre-lecture assignment for each chapter will be given.

Mastering Physics course identification:

Section A (8:30 MWF 8:30 R meetings): **pepe73367**

Section B (9:40 MWF 10:05 R meetings): **pepe58524**

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.

LockDown Browser + Webcam Requirement

This course requires the use of Respondus LockDown Browser and a webcam to monitor the online exams. The LockDown browser will prevent you from accessing other websites or applications during an exam. The webcam can be the type that's built into your computer or one that plugs in with a USB cable.

Carefully follow the steps in [this article](#). These will guide you through the process of:

- **Installing** Respondus LockDown Browser
- **Testing** your computer/webcam/network
- **Getting help** with Respondus LockDown and Monitor
- **Ensuring a successful exam** experience

Course Grades:

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

- Hourly exams: $3 \times 12 = 36\%$
- MasteringPhysics prelectures: 6%
- Learning Catalytics: 24%
- MasteringPhysics Homework Quizzes: 16%
- Final examination: 18%

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 synchronous live online 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.

STUDENTS MUST READ APPROPRIATE SECTIONS BEFORE COMING TO CLASS.

Feb 1, 3, 4, 5	Chapter 20: Electric Fields and Forces Questions: 8,16,32,33 Problems: 1,13,18,29,41,54,58,61,68,76
Feb 8, 10, 11, 12	Chapter 21: Electric Potential Q: 6,8,11,15,17 P: 13,17,19,33,51,60,63,72,75,82
Feb 15	Chapter 22: Current and Resistance Q: 10,21,27 P: 11,19,23,29,54,64
Feb 17, 18, 19	Chapter 23: Electric Circuits Q: 17,26,27,38 P: 5,16,28,35,47,66,77
Feb 22, 24, 25, 26 Mar 3	Chapter 24: Magnetic Fields and Forces Q: 13,15,18,26,30 P: 6,10,17,23,31,33,45,48,58,70
Mar 3	EXAM I - Chapters 20, 21, 22, 23 –6:40 pm
Mar 4, 5, 8, 10, 11, 12, 15	Chapter 25: Electromagnetic Induction and Electromagnetic Waves Q: 3,11,15,18,28,29,36 P: 4,12,17,20,21,36,47,54,64,65,71,74
Mar 17, 18, 19, 22, 25, 26	Chapter 17: Wave Optics Q: 4,6,8,17 P: 1,8,21,25,31,37,46,49,57,61
Mar 31	EXAM II - Chapters 24, 25 - 6:40 pm
Mar 31 Apr 1, 2	Chapter 18: Ray Optics Q: 6,9,12,25,26,27 P: 7,23,35,41,45,66,69,70,72,82
Apr 5, 7, 8	Chapter 19: Optical Instruments Q: 10,17,23,24 P: 1,17,22,29,40,47,58,60
Apr 9, 12, 14, 16, 21	Chapter 27: Relativity Q: 3,16,18,21 P: 5,9,13,23,32,35,40,43,65,67,70
Apr 21	EXAM III - Chapters 17, 18, 19 - 6:40 pm
Apr 23, 26, 28	Chapter 28: Quantum Physics Q: 4,6,12,17,38 P: 10,14,24,31,36,41,47,53
Apr 29, 30 May 3	Chapter 29: Atoms and Molecules Q: 6,11,19,31 P: 3,15,22,27,40,52,59,61
May 5, 6	Chapter 30: Nuclear Physics Q: P:
May	Final Exam - Comprehensive – TBA