UNIVERSITY OF VERMONT

Department of Physics

Physics 13

Spring 2023

General Information

Instructor: Jason Pepe, Innovation Hall 231

Phone: 656-8865

email: Jason.Pepe@uvm.edu

Office Hours: Mon, Wed 1:00-2:00 or by appointment

Materials:

- *Textbook*: "Conceptual Physics" by Paul G. Hewitt, 13th 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
- 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, and Fridays. 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 and Pre-Lectures:

There will be weekly Mastering Physics online homework assignments. Late Mastering Physics assignments will not be accepted. There will be no make-ups. The lowest score will be dropped from the record. In addition to the homework, a Mastering Physics pre-lecture assignment will be given each week.

Mastering Physics course identification: **pepe59908**

Examinations:

There will be three midterm exams based on class material, Learning Catalytics exercises, homework, and textbook material. There will also be a 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 ×16 = 48%
- MasteringPhysics/Learning Catalytics: 36%
- 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. 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.

continued 

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Department of Physics **Course Outline**

Schedule of Meetings

STUDENTS MUST READ APPROPRIATE SECTIONS BEFORE COMING TO CLASS.

Week 1 Jan 18, 20	Chapter 2: **Newton's 1st Law** Chapter 3: **Linear Motion**
Week 2 Jan 23, 25, 27	Chapter 4: **Newton's 2nd Law** Chapter 5: **Newton's 3rd Law** Chapter 6: **Momentum**
Week 3 Jan 30; Feb 1, 3	Chapter 7: **Energy** Chapter 8: **Rotational Motion**
Week 4 Feb 6, 8, 10	Exam prep **Exam I** Chapter 22: **Electrostatics**
Feb 8	**EXAM I - Chapters 2,3,4,5,6,7,8**
Week 5 Feb 13, 15, 17	Chapter 22: **Electrostatics** Chapter 23: **Electric Current** Chapter 24: **Magnetism**
Week 6 Feb 22, 24	Chapter 24: **Magnetism** Chapter 25: **Electromagnetic Induction**
Week 7 Feb 27; Mar 1, 3	Chapter 25: **Electromagnetic Induction**
Week 8 Mar 6, 8, 10	Exam prep **Exam II** Chapter 19: **Vibrations and Waves**
Mar 8	**EXAM II - Chapters 22,23,24,25**
Week 9 Mar 20, 22, 24	Chapter 20: **Sound** Chapter 21: **Musical Sounds**
Week 10 Mar 27, 29, 31	Chapter 26: **Properties of Light** Chapter 27: **Color**
Week 11 Apr 3, 5, 7	Chapter 28: **Reflection and Refraction** Chapter 29: **Light Waves**

Week 12 Apr 10, 12, 14	Exam prep **Exam III** Chapter 31: **Light Quanta**
Apr 12	**EXAM III - Chapters 19,20,21,26,27,28,29**
Week 13 Apr 17, 19, 21	Chapter 31: **Light Quanta** Chapter 32: **The Atom and the Quantum** Chapter 33: **The Atomic Nucleus and Radioactivity**
Week 14 24, 26, 28	Chapter 33: **The Atomic Nucleus and Radioactivity** Chapter 34: **Nuclear Fission and Fusion** Chapter 35: **Special Theory of Relativity**
Week 15 May 1, 3, 5	Chapter 35: **Special Theory of Relativity** Exam prep
May	**Final Exam - TBA**

Homework

Chap. 2: 35, 37, 38, 39
Chap. 3: 41, 49, 50, 51, 53
Chap. 4: 50, 51, 53, 54, 55
Chap. 5: 30, 31, 33, 34, 35, 36
Chap. 6: 39, 40, 42, 43, 45, 51
Chap. 7: 46, 50, 52, 55, 59, 60
Chap. 8: 48, 49, 50, 51, 57

Chap. 22: 37, 39, 43, 46, 47, 48
Chap. 23: 43, 45, 49, 50
Chap. 24: Right-handed rules
Chap. 25: 45, 46

Chap. 19: 39, 41, 46, 47, 48
Chap. 20: 35, 37, 41, 43
Chap. 21: 26, 29, 32, 33, 34
Chap. 26: 35, 37, 38, 39
Chap. 27: 52, 53, 59
Chap. 28: 39, 40, 41, 46
Chap. 29: 41, 46

Chap. 31: 33, 34, 35, 44, 45, 50

Chap. 32: 23, 25

Chap. 33: 38, 42, 45, 46, 48, 76

Chap. 34: 33, 34, 37, 46

Chap. 35: 38, 40, 42, 48