Physics 10 - Intro to Physics

with textbook based on





Course Overview

Course Code and Semester: Physics 10, Class Number 40894, Fall 2019

Course Description: Elementary introduction to the field of physics: Mechanics, heat, electricity and magnetism, sound, optics, and modern physics. (Satisfies COA AA/AS area 1; CSU area B1; contact the instructor regarding UC transferability of this course) **Recommended Preparation**: Math 201 (elementary algebra) or Math 202 (geometry)

Who should take this course?

- Non-science major students who need to satisfy a physical science without lab requirement.
- Intended physics and engineering major students, if they have no prior exposure to physics (high school physics class or general knowledge) and/or if they are not ready to take Physics 4A yet.
- Students who want to see all the topics covered in study of physics in one semester.

If you need to satisfy "physical science with lab" requirement, please contact the instructor; we offered the Physics 10L lab course, for the first time in Spring 2019 (so that Physics 10 and Physics 10L together will satisfy "physical science with lab" requirement), and we are hoping to offer it again soon. As always, please check with your transfer institution, to ensure that this course meets the requirements of their program.

Student Learning Outcomes

- 1. Using written language, students explain and discuss the physics concepts listed in the course content, and apply them to everyday phenomena and interdisciplinary examples.
- 2. Students apply simple formulas to calculate measurable quantities that describe the physical environment related to the concepts of physics.
- 3. Students explain and discuss physical principles underlying classroom demonstrations.

Instructor Information

Hi! My name is **Andrew Park**. The best way to contact me for course-related matters is through Canvas **Conversations** (https://peralta.instructure.com/conversations) tool (for non-course matters, best way is by email: bpark@peralta.edu (mailto:bpark@peralta.edu)). You will hear from me regularly throughout the semester, usually through the **Course Announcements**

(https://peralta.instructure.com/courses/26415/announcements). If you need to talk (rather than write) to me, please see office hour information below.



Office Hours

There are two office hours to be scheduled for this class. One office hour will be used for an **online** virtual class session (**day/hour to be determined in the first week**), to be held using ConferZoom.

Face-to-face office hour for this class is scheduled on Friday from 2 to 3 p.m. in ATLAN 100. ATLAN 100 is in Peralta Science Annex (street address: 860 Atlantic Ave., Alameda, CA).

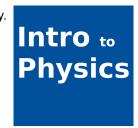
If these hours do not work, please email or message me to arrange another time. I usually respond to emails and messages within 24 hours (and often sooner).

Course Materials

Great news! Your course material is free! All necessary course materials are provided free of charge digitally. We are using a version of textbook derived from OpenStax College Physics (pared down to fit into one semester). You can access your textbook in following ways:

- Access it online on CNX.org (https://cnx.org/contents/WPust2k9) (this is always the latest version).
- Download <u>PDF (https://peralta.instructure.com/courses/26415/files/1027222/download?wrap=1)</u> ↓ (https://peralta.instructure.com/courses/26415/files/1027222/download?download_frd=1) (this is version 11.10, size 106 MB).





Important Notes

Exams

There will be four midterm exams (Exams 1, 2, 3, and 4) and one comprehensive, cumulative final exam. There are both in-person ("Option A") and online ("Option B") options for the midterms and the final exam (but please note the Option B Final Exam must be oral exam by video conference; see more below). All students are recommended to choose the in-person option whenever possible (Option A exams are most similar to other exams that you may be familiar with already), but online options are available for those students whose work, academic, or other personal situation makes it difficult for them to take the exam in person. Exams account for 60% of your grade.

Exams are held in the following weeks:

- Exam 1: week of September 13 (Week 4)
- Exam 2: week of October 11 (Week 8)
- Exam 3: week of November 8 (Week 12)
- Exam 4: week of December 6 (Week 16)
- Final Exam: week of December 13

Option A exam times are usually offered on regular pattern of Thursday early morning and Friday afternoon times during the exam week. Additional exam seatings may be scheduled on request. Option B exams are taken at the time of student's choosing, after a 15-minute video chat to go over exam rules and to receive exam password.

ADA Accommodation

Students who may need accommodation for their disabilities are encouraged to contact Disabled Students Program and Services (http://alameda.peralta.edu/dsps/) (available in Room D-117 or by phone, 510-748-2328) as soon as possible in the semester so that reasonable (and legally-mandated) accommodations may be made. Usual accommodations made include extended exam time and/or transcription service. Most students with a diagnosed learning disability (such as ADHD or ADD) are eligible. If you are not sure whether you are eligible, please check with a DSPS counselor. The details regarding the nature of your disability are confidential and not shared with your instructor.

Instructor's personal note: In my experience, many students who should have utilized DSPS service do not use them and suffer consequences academically. The goal of DSPS (and ADA in general) is that you should be judged on your ability, not disability. For those students who are eligible, DSPS accommodation is what will help you express your full potential (not a special treatment or something to be stigmatized against).

Talk to a DSPS counselor today; the worst that can happen is they will tell you you are not eligible and you wasted a little bit of time.

Tutoring and Academic Support

Physics tutors are usually available in the Math Lab on the 2nd floor of the Learning Resources Center (L 202D). Register for the free COA course, Learning Resources LRNRE 501, 24 hours in advance of using any tutoring services.

Online tutoring: Following services had been available in the past, but I had trouble verifying their availability for Physics 10 this semester. I am providing this information on AS-IS basis, but please do let me know if it worked or didn't work for you.

- Upswing.io: Find out more from our LRC website (http://alameda.peralta.edu/learning-resource-center/)_.
- NetTutor: You can access it through "Online Tutoring (https://peralta.instructure.com/courses/26415/external_tools/4596?
 <u>display=borderless</u>)" link on the sidebar. This is a new program available through <u>California Community Colleges Online</u>
 <u>Education Initiative</u> (http://ccconlineed.org/student-success-resources/tutoring/). Please let me know how it worked/didn't work for you.

Tips for Success in Physics 10 Online

Follow these advices to maximize your chance of success in this class.

First, here's a little bit on my grading approach. My goal in grading is to reward two things: (1) the effort you put into this class, and (2) your understanding and knowledge of physics. For those just wanting to pass this class, I have a good news: *my* goal is to pass every student who stays engaged with the course to the end of the semester, and last time I failed was the first time I taught this class, in Spring 2016. **But what about those who want to get a B or an A in this class?**

Here's what I recommend for those who want to put in the effort:

- First, realize that this *online* class requires more self-discipline and integrity, as well as a level of comfort with technology, than face-to-face classes do. Set aside a time to regularly work on the assigned readings and problems, and be proactive in contacting me if you have any issues with Canvas, or any other technologies being used for the class. (Read more: Orientation to Online Learning (https://peralta.instructure.com/courses/26415/pages/orientation-to-online-learning).)
- Second, make sure the line of communication is open. Most course announcements are made through <u>Canvas</u>
 <u>Announcement (https://peralta.instructure.com/courses/26415/announcements)</u>. Check your <u>Notification settings</u>
 (https://peralta.instructure.com/profile/communication) to make sure you receive timely notifications.
- Lastly, make use of all the resources being made available in the course. To make up for the lack of face-to-face interactions, lecture videos are posted for key topics and exercises, questions maybe posed in graded discussions, and peer-graded essay assignments are designed around multimedia learning material.

I believe it is possible not only for every one of you to pass this class but also for everyone to do so with a grade of B or better—all that is needed is for you to have a little bit of self-discipline and to put in a consistent effort.

Calendar and Assignments

This online course syllabus is hosted on Canvas which makes the calendar and assignments available to you at one glance (I have locked old modules while I update the organization into weekly format for this semester; some due dates may shift slightly). Please look on your right for the calendar of assignments and course events (or go to your Canvas Calendar (https://peralta.instructure.com/calendar); make sure content from this course is displayed), as well as weighting of assignments for your course grade. Please look below for summary of course assignments. Fine-print details are below—I encourage you to read

The Fine Print - Course Policies

Please read on for the full listing of course policy. If you would rather skip it, that is fine; I will remind you of anything that is important.

through them (this is our contract for the semester), but I will remind you of anything that is important.

• **Registration**: After the last day to register for classes (**September 2**), you must be registered in the class in order for you to receive credit. No students can be added after this date.

- Attendance: This is an online class and no face-to-face class attendance is required. *However*, students who miss assignments due in the first week will be dropped from class as "no show". Also, instructor may drop a student if the student misses an excessive number of assignments without excuse. (See pg. 28 of College of Alameda 2019-2020 catalog (https://alameda.peralta.edu/wp-content/uploads/2019/03/COA-Catalog-2019-2020.pdf) for the college policy on attendance for face-to-face classes, which this is modeled after.)
- Honor Code Pledge: You must complete honor code pledge (to be completed early second week) to continue in this class. In addition, participation in certain activities deemed especially to require honor and integrity on the students' part will be limited only to students who honor their pledge (alternate option will be made available to students who have lost their eligibility).
- **Schedule Subject to Change**: Assignment and exam schedules are subject to change. Any changes will be announced through Canvas, and all efforts will be made to accommodate students.
- Late Assignments: All assignments are due on the date noted. Canvas will accept late submissions on essay or discussion assignments (the instructor reserves right to grade late submissions in appropriate cases). MyOpenMath assignments must be extended using a "late pass". Twelve late passes are given at the beginning of semester, and each late pass extends a MyOpenMath assignment deadline by 72 hours. Exams will be extended only in rare circumstances arising out of a situation beyond the student's control.
- Option A Exam Proctoring in Your City/Town: Only for students living too far away to reasonably travel to Alameda for inperson exam. You can arrange for an authorized person (usually a teacher at your school or an instructor at your local community college) to proctor the exam. Please contact the instructor as soon as possible to make the arrangement; it usually takes a week for the arrangement to be set up the first time.
- Option B Final Exam Format: In order to ensure security of the exam, if you choose to take the final exam as Option B (online option), the exam will take the form of an oral exam. We will schedule a 2-hour video chat during the finals week, and this video chat itself will be the exam (the video chat will be recorded for record retention purposes). If you have not taken an oral exam in the past, you can think of it like a very long interview, where instead of trying to decide if you are good fit for a job position, I am trying to determine how much physics you understand.
- Allowed/Prohibited Items during Option A Exam:
 - Allowed: calculators without communication capability, limited notes (one page for midterms and one double-sided sheet for final exam), paper-bound foreign language dictionaries, writing instruments (pencil and pen), and a water bottle.
 - Prohibited: communication devices of any kind (cell phones, pagers, etc.), electronic devices other than a calculator,
 English-to-English dictionaries or any other books including the textbook.
- Allowed/Prohibited Items during Option B Exam (open book):
 - Allowed: calculators, foreign language dictionaries, any material that is provided in the context of the course (usually through Canvas), and the means used to access the online exam.
 - Prohibited: any outside help, including but not limited to: (a) an individual providing help during the exam, (b) external
 websites, unless they are used purely for calculation function, and (c) external references, either in digital or paper-bound
 format, other than those allowed above.
- Holistic Grading Rubric: A holistic grading scale is used for grading essay questions on the exam
 - 5 (out of 5 points possible): "Excellent understanding." The student clearly understands underlying concepts; one or two
 minor reasoning mistakes can appear on a "5" solution, if they don't lead to larger conceptual errors.
 - 4: "Good understanding." The student understands the main concepts and problem-solving approaches but is missing one major concept, or made one major mistake that may involve conceptual misunderstanding.
 - 3: "Fair understanding." The student remembers some basic concepts but needs to include and integrate several additional major concepts in their reasoning.
 - 2: "Poor understanding." The student mentions some laws and principles from memory that may be relevant but shows little understanding of how they are relevant.
 - 1: "No understanding." The student writes down something that may (or may not) be relevant.
 - o 0: "Blank." Blank answers.

- Course Assignment Weights: assignments (including exams) count for your overall course grade in following proportions (Note: During the semester, Midterm Exams may appear to have 60% on Canvas; this is only to provide an accurate final grade estimate, assuming your Final Exam is similar to your Midterm Exams. The weights used after conclusion of semester are as below):
 - Questions and Exercises: 20%
 - Essay Questions: 10%Peer Reviews: 5%
 - Participation (Graded Discussions and other assignments): 5%
 - Midterm Exams: 30%Final Exam: 30%
- Course Grading Scale: The letter grades are assigned following this course grade scale:
 - o A: 85 to 100%
 - o B: 70 to 85%
 - o C: 50 to 70%
 - o D: 40 to 50%
 - F: below 40%

The instructor reserves the right to exercise discretion on the margins around this scale.

- List of Topics: Textbook: <u>Introduction to Physics</u> ⇒ <u>(https://cnx.org/contents/WPust2k9)</u> by Andrew Park (derived from *Concepts of Physics* by Bobby Bailey, which is derived from *College Physics* by OpenStax)
 - o Chapter 1: Introduction
 - o Chapter 2: Kinematics
 - o Chapter 3: Dynamics
 - Chapter 4: Work and Energy
 - o Chapter 5: Impulse and Momentum
 - o Chapter 6: Oscillations and Waves
 - Chapter 7: Rotation
 - Chapter 8: Fluids
 - o Chapter 9: Thermal Physics
 - Chapter 10: Electricity
 - o Chapter 11: Magnetism
 - o Chapter 12: Light
 - Chapter 13: Quantum Mechanics
 - Chapter 14: Special Relativity
 - o Chapter 15: Nuclear and Particle Physics

We are skipping some sections but all chapters are covered, and most of the sections are covered in exams. The homework exercises and review problems are most indicative of the level of details at which each chapter is covered.

Course Summary:

Date	Details	Due
Wed Aug 21, 2019	[GRADED DISCUSSION] Introduce Yourself (https://peralta.instructure.com/courses/26415/assignments/152119)	due by 11:59pm
Fri Aug 23, 2019	[GRADED DISCUSSION] Scientific Method (https://peralta.instructure.com/courses/26415/assignments/152118)	due by 11:59pm
	Questions for "Chapter 1: Introduction" (https://peralta.instructure.com/courses/26415/assignments/152180)	due by 11:59pm

Date	Details	Due
	Reading Questions for Sections 2.1 through 2.4 (https://peralta.instructure.com/courses/26415/assignments/152182)	due by 11:59pm
Wed Aug 28, 2019	Think, Pair, Share - Chapter 2 (https://peralta.instructure.com/courses/26415/assignments/183037)	due by 11:59pm
Fri Aug 30, 2019	Honor Code Pledge (https://peralta.instructure.com/courses/26415/assignments/152111)	due by 11:59pm
	Essay Assignment for "Chapter 2: Kinematics" (https://peralta.instructure.com/courses/26415/assignments/152127)	due by 11:59pm
	Questions and Exercises for "Chapter 2: Kinematics" (https://peralta.instructure.com/courses/26415/assignments/152167)	due by 11:59pm
	Questions and Exercises for Sections 2.1 through 2.6 (https://peralta.instructure.com/courses/26415/assignments/152177)	due by 11:59pm
	Reading Questions for Section 2.7 (https://peralta.instructure.com/courses/26415/assignments/152181)	due by 11:59pm
Tue Sep 3, 2019	Peer Grading for "Chapter 2: Kinematics" Essay Assignment (https://peralta.instructure.com/courses/26415/assignments/152150)	due by 11:59pm
	Questions and Exercises for Sections 3.1 through 3.3 (https://peralta.instructure.com/courses/26415/assignments/152178)	due by 11:59pm
Wed Sep 4, 2019	[EXTRA CREDIT DISCUSSION] How do you access peer reviews? (https://peralta.instructure.com/courses/26415/assignments/152113)	due by 11:59pm
	Think, Pair, Share - Chapter 3 (https://peralta.instructure.com/courses/26415/assignments/189180)	due by 11:59pm
Fri Sep 6, 2019	Essay Assignment for "Chapter 3: Dynamics" (https://peralta.instructure.com/courses/26415/assignments/152128)	due by 11:59pm
	Questions and Exercises for Sections 3.1 through 3.7 (https://peralta.instructure.com/courses/26415/assignments/152179)	due by 11:59pm
Mon Sep 9, 2019	Peer Grading for "Chapter 3: Dynamics" Essay Assignment (https://peralta.instructure.com/courses/26415/assignments/152151)	due by 11:59pm
	Questions and Exercises for "Chapter 3: Dynamics"	due by 11:59pm

Date	Details	Due
	(https://peralta.instructure.com/courses/26415/assignments/152168)	
	Reading Questions for Sections 3.8 and 3.9 (https://peralta.instructure.com/courses/26415/assignments/152183)	due by 11:59pm
Wed Sep 11, 2019	[EXTRA CREDIT DISCUSSION] How do you access appointment groups? (https://peralta.instructure.com/courses/26415/assignments/152112)	due by 11:59pm
Fri Sep 13, 2019	Option A Exam 1 (closed-book, limited-notes; 2-hour limit) (https://peralta.instructure.com/courses/26415/assignments/152135)	due by 11:59pm
Mon Sep 16, 2019	Option B Exam 1 (open book; 2-hour limit) (https://peralta.instructure.com/courses/26415/assignments/152140)	due by 2am
Wed Sep 18, 2019	[GRADED DISCUSSION] What does this mean to you? (https://peralta.instructure.com/courses/26415/assignments/152116)	due by 11:59pm
Fri Sep 20, 2019	Essay Assignment for "Chapter 4: Work and Energy" (https://peralta.instructure.com/courses/26415/assignments/152129)	due by 11:59pm
	Questions and Exercises for "Chapter 4: Work and Energy" (https://peralta.instructure.com/courses/26415/assignments/152169)	due by 11:59pm
Sat Sep 21, 2019	Practice Exam 1 - Multiple-Choice (35 Questions; self-timed) (https://peralta.instructure.com/courses/26415/assignments/152157)	due by 11:59pm
Mon Sep 23, 2019	Essay Assignment for "Chapter 5: Impulse and Momentum" (https://peralta.instructure.com/courses/26415/assignments/152130)	due by 11:59pm
	Peer Grading for "Chapter 4: Work and Energy" Essay Assignment (https://peralta.instructure.com/courses/26415/assignments/152152)	due by 11:59pm
	Questions and Exercises for "Chapter 5: Impulse and Momentum" (https://peralta.instructure.com/courses/26415/assignments/152170)	due by 11:59pm
	Think, Pair, Share - Chapters 4 and 5 (https://peralta.instructure.com/courses/26415/assignments/193500)	due by 11:59pm
Fri Sep 27, 2019	Peer Grading for "Chapter 5: Impulse and Momentum" Essay Assignment (https://peralta.instructure.com/courses/26415/assignments/152153)	due by 11:59pm
	Reading Questions for Sections 6.1 through 6.3	due by 11:59pm

Date	Details	Due
	(https://peralta.instructure.com/courses/26415/assignments/152184)	
Mon Sep 30, 2019	Essay Assignment for "Chapter 6: Oscillations and Waves" (https://peralta.instructure.com/courses/26415/assignments/152131)	due by 11:59pm
	Questions and Exercises for "Chapter 6: Oscillations and Waves" (https://peralta.instructure.com/courses/26415/assignments/152171)	due by 11:59pm
	Think, Pair, Share - Chapter 6 (https://peralta.instructure.com/courses/26415/assignments/194903)	due by 11:59pm
Fri Oct 4, 2019	Essay Assignment for "Chapter 7: Rotation" (https://peralta.instructure.com/courses/26415/assignments/152132)	due by 11:59pm
	Peer Grading for "Chapter 6: Oscillations and Waves" Essay Assignment (https://peralta.instructure.com/courses/26415/assignments/152154)	due by 11:59pm
	Questions and Exercises for "Chapter 7: Rotation" (https://peralta.instructure.com/courses/26415/assignments/152172)	due by 11:59pm
Mon Oct 7, 2019	Peer Grading for "Chapter 7: Rotation" Essay Assignment (https://peralta.instructure.com/courses/26415/assignments/152155)	due by 11:59pm
	Questions and Exercises for "Chapter 8: Fluids" (https://peralta.instructure.com/courses/26415/assignments/152173)	due by 11:59pm
Fri Oct 11, 2019	Option A Exam 2 (closed-book, limited-notes; 2-hour limit) (https://peralta.instructure.com/courses/26415/assignments/152136)	due by 11:59pm
Sun Oct 13, 2019	Option B Exam 2 (open book; 2-hour limit) (https://peralta.instructure.com/courses/26415/assignments/152141)	due by 11:59pm
	Practice Exam 2 - Multiple-Choice (35 Questions; self-timed) (https://peralta.instructure.com/courses/26415/assignments/152158)	due by 11:59pm
Wed Oct 16, 2019	[GRADED DISCUSSION] Electricity and Magnetism (https://peralta.instructure.com/courses/26415/assignments/152115)	due by 11:59pm
Mon Oct 21, 2019	Peer Grading for "Chapter 9: Thermal Physics" Essay Assignment (https://peralta.instructure.com/courses/26415/assignments/152156)	due by 11:59pm
Fri Oct 25, 2019	Electricity"	due by 11:59pm

Date	Details	Due
	(https://peralta.instructure.com/courses/26415/assignments/152121)	
	Questions and Exercises for Sections 10.1 through 10.6 (https://peralta.instructure.com/courses/26415/assignments/152175)	due by 11:59pm
Mon Oct 28, 2019	Peer Grading for "Chapter 10: Electricity" Essay Assignment (https://peralta.instructure.com/courses/26415/assignments/152144)	due by 11:59pm
	Questions and Exercises for Sections 10.7 through 10.11 (https://peralta.instructure.com/courses/26415/assignments/152176)	due by 11:59pm
	Essay Assignment for "Chapter 11: Magnetism" (https://peralta.instructure.com/courses/26415/assignments/152122)	due by 11:59pm
Fri Nov 1, 2019	Questions and Exercises for "Chapter 11: Magnetism" (https://peralta.instructure.com/courses/26415/assignments/152162)	due by 11:59pm
Mon Nov 4, 2019	Essay Assignment for "Chapter 12: Light" (https://peralta.instructure.com/courses/26415/assignments/152123)	due by 11:59pm
110111101 4, 2013	Questions and Exercises for "Chapter 12: Light" (https://peralta.instructure.com/courses/26415/assignments/152163)	due by 11:59pm
Tue Nov 5, 2019	Option B Exam 3 Video Chat (https://peralta.instructure.com/calendar? event_id=13282&include_contexts=course_26415)	10am to 10:30am
Fri Nov 8, 2019	Peer Grading for "Chapter 11:Magnetism" Essay Assignment (https://peralta.instructure.com/courses/26415/assignments/152145)	due by 11:59pm
	Option A Exam 3 (closed-book, limited-notes; 2-hour limit) (https://peralta.instructure.com/courses/26415/assignments/152137)	due by 11:59pm
Sun Nov 10, 2019	Option B Exam 3 (open book; 2-hour limit) (https://peralta.instructure.com/courses/26415/assignments/152142)	due by 11:59pm
	Practice Exam 3 - Multiple-Choice (35 Questions; self-timed) (https://peralta.instructure.com/courses/26415/assignments/152159)	due by 11:59pm
Mon Nov 11, 2019	Peer Grading for "Chapter 12: Light" Essay Assignment (https://peralta.instructure.com/courses/26415/assignments/152146)	due by 11:59pm

Date	Details	Due
Wed Nov 13, 2019	[GRADED DISCUSSION] Scientific Revolutions (https://peralta.instructure.com/courses/26415/assignments/152114)	due by 11:59pm
Fri Nov 15, 2019	Essay Assignment for "Chapter 13: Quantum Mechanics" (https://peralta.instructure.com/courses/26415/assignments/152124)	due by 11:59pm
Mon Nov 18, 2019	Peer Grading for "Chapter 13: Quantum Mechanics" Essay Assignment (https://peralta.instructure.com/courses/26415/assignments/152147)	due by 11:59pm
	Questions and Exercises for "Chapter 13: Quantum Mechanics" (https://peralta.instructure.com/courses/26415/assignments/152164)	due by 11:59pm
Fri Nov 22, 2019	Essay Assignment for "Chapter 14: Special Relativity" (https://peralta.instructure.com/courses/26415/assignments/152125)	due by 11:59pm
	Questions and Exercises for "Chapter 14: Special Relativity" (https://peralta.instructure.com/courses/26415/assignments/152165)	due by 11:59pm
Mon Nov 25, 2019	Essay Assignment for "Chapter 15: Nuclear and Particle Physics" (https://peralta.instructure.com/courses/26415/assignments/152126)	due by 11:59pm
	Peer Grading for "Chapter 14: Special Relativity" Essay Assignment (https://peralta.instructure.com/courses/26415/assignments/152148)	due by 11:59pm
Mon Dec 2, 2019	Peer Grading for "Chapter 15: Nuclear and Particle Physics" Essay Assignment (https://peralta.instructure.com/courses/26415/assignments/152149)	due by 11:59pm
	Questions and Exercises for "Chapter 15: Nuclear and Particle Physics" (https://peralta.instructure.com/courses/26415/assignments/152166)	due by 11:59pm
Fri Dec 6, 2019	Option A Exam 4 (closed-book, limited-notes; 2-hour limit) (https://peralta.instructure.com/courses/26415/assignments/152138)	due by 11:59pm
Sun Dec 8, 2019	Option B Exam 4 (open book; 2-hour limit) (https://peralta.instructure.com/courses/26415/assignments/152143)	due by 11:59pm
	Practice Exam 4 - Multiple-Choice (35 Questions; self-timed) (https://peralta.instructure.com/courses/26415/assignments/152160)	due by 11:59pm

Date	Details	Due
Fri Dec 13, 2019	Option A Final Exam (closed-book, limited-notes; 2-hour limit) (https://peralta.instructure.com/courses/26415/assignments/152139)	due by 11:59pm
	Practice Final Exam - Multiple-Choice (35 Questions; self-timed) (https://peralta.instructure.com/courses/26415/assignments/152161)	due by 11:59pm
Fri Dec 20, 2019	Errata Extra Credit (https://peralta.instructure.com/courses/26415/assignments/152120)	due by 11:59pm
	Final Course Letter Grade (https://peralta.instructure.com/courses/26415/assignments/152134)	due by 11:59pm
Sat Feb 29, 2020	Essay Assignment for "Chapter 9: Thermal Physics" (https://peralta.instructure.com/courses/26415/assignments/152133)	due by 11:59pm
	Questions and Exercises for "Chapter 9: Thermal Physics" (https://peralta.instructure.com/courses/26415/assignments/152174)	due by 11:59pm
	Reading Questions for Sections 9.1 through 9.4 (https://peralta.instructure.com/courses/26415/assignments/152185)	due by 11:59pm