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## A) General information

Physics Fall 2024

Instructor: Ronald Francis

PHD in Experimental Physics: (MIT).

Thesis topic: Dynamic light scattering in 2D melting transition of colloidal crystals

BS in Applied Physics (Caltech).

Advanced classes in statistical mechanics, quantum mechanics and fluid mechanics.

Additional classes in theory of education

Instructor of AAPT New England Region Physics Bowl Champions (2 separate years)

15 years of physics teaching at Deanza, 30 years total

Email: francisronald@fhda.edu

Homepage: used to be <http://nebula.deanza.edu:16080/~ronald/> .... (probably not working)

Office: it's E34A but I'm not there very often...too far away ... I'm usually in student success center S43, in the lab (S11 and S17), or maybe the PSME Village social space

### My Class Schedule

Physics 2A Lecture:	Mon – Thu	9:30 to 10:30
Physics 2A Lab:	Mon	10:30 to 1:20
Physics 2A Lab:	Wed	10:30 to 1:20
Physics 50 Lab	Tue, Thurs	10:30 to 12:20

### Office hours:

Tues	12:30 to 1:20:
Thurs	12:30 to 1:20:
Mon	1:30 to 2:00
Wed	1:30 to 2:00
Fri	9:00 to 10:00 Online

To be determined

Students can also email me at any time (usually evening works well). I'll usually respond within hours but definitely within 48 hours. My office hours are also posted on division website, as they are for all faculty.

### Length of this syllabus

This syllabus is a little long but it is not that complicated. Part of the reason it is long is because it is attempting to be very clear or it is attempting to cover many possible situations (reducing personal biases) in order to be fair. So do not "stress out" about the syllabus; just read it, follow the basic rules and you'll be fine in most cases. Most important rules are in bold.

### If you don't want to read the syllabus then just remember these important 9 rules:

- Each THW questions and problems must have physical diagrams that include matter and / or energy... see sample (even the occasional "pure math" problems will need a physical situation that you create)
- Pick up graded work (placed at the side of the class) as soon as you enter the classroom. Your grade on an assignment is not visible to other students.
- Save all of your graded work in the rare case of a lost grade. This also helps you calculate a "current" grade of you would like to
- Late assignments can be turned in before midnight to receive 50 % credit.
- Study practice problems (done in class and also available on practice quizzes) carefully since most of quiz material is based on them. Study to the point of mastery: being able to do a problem without much hesitation.
- reserve a minimum of two hours of time to prepare for quizzes and also least 1.5 hours per night of general review.
- Ask questions about things that you don't understand.
- NO TYPED WORK or ELECTRONIC WORK IS EVER ALLOWED IN THIS CLASS: Work must be done "by hand" ON PHYSICAL BLANK (No ruled lines) PAPER**

i) No calculator is ever allowed in class except for lab classes (Not physics 50 or physics 10)

**Student Success Center::** <http://www.deanza.edu/studentsuccess/>

Deanza college has tutoring services and I highly recommend that every student get regular tutoring if she / he needs it or even if you don't need it. Tutoring is available and free... why not use it?...Check the website for online tutoring. There is also the "Net Tutor" link in Canvas that has many options. Many students regret not signing up for tutoring at the beginning of a class.

### **Non-discrimination policy:**

My belief is that any and every person is capable of learning physics regardless of any personal, cultural or physical characteristics. I won't tolerate attitudes or behaviors that are classist, racist, sexist, homophobic or otherwise discriminatory in class. We shall attempt to use gender neutral language and respect the fact that people of different backgrounds can bring unique and useful perspectives to every discipline including physics. In teaching I will use clear English spoken at a slow-moderate pace and often avoid idiomatic expressions. Terms that may be unusual will be defined.

### **Textbook and pre-requisites**

You can use any edition of the books listed below, or some other equivalent textbook, or no textbook.

Physics 10 uses Hewitt's Conceptual Physics.

Physics 50 uses James Walker's Physics

Physics 2A – 2C series uses Halliday, Resnick and Walker

Physics 4A – 4C series uses Physics for Scientists and engineers by Serway and Jewett.

Physics 4D uses Modern Physics by Serway Moses and Meyer

For chapter 1 (Intro to Physics generally for physics 50, 2A and 4A only), we will use the free Open Stax textbook which you will be required to read for you Chapter Summary. Chapter 1 of Open Stax is in Canvas.

**You are not required to buy any specific textbook but you must use some textbook (or online source) in order to do required Chapter Summaries (CS)...** You can use any equivalent book that you like (or is inexpensive) or is online. Textbook HW assignments (THW) from the "official" textbook edition will be made available to you at the library or in canvas, if you don't have the specific edition that we are using.

### **Basic Short Overall description of class (attendance, quizzes and tests):**

1) There will be 5 or 6 quizzes about 15 minutes each. Quizzes are given nearly exactly at start of class. Students read the quiz without writing for 3 or 4 minutes and then use the remaining time to write the solutions.

Quizzes will be on material from (Quiz day minus 10 days) to (Quiz day minus 3 days). For example if a quiz is on Thursday July 19<sup>th</sup> then it would be on lecture material from Monday July 9<sup>th</sup> to Monday July 16<sup>th</sup>.

2) There are two midterms and one final. Final exam material is 60 % on material after midterm #2 and 40 % on material before midterm #2.

3) Students are expected to be on time for every session. Every two tardies (latenesses) – for any of the sessions (lab or lecture) is equivalent to an absence. Tardies and latenesses result in deductions of final course grade (see below). Attendance sheet is passed around class.

4) Save all of your quizzes, essays, exams etc... so that you have a record of your grades and in case I accidentally make a recording error and need the graded work a 2<sup>nd</sup> time.

5) You should keep all of your graded work in a single spot so that you, or I, can easily estimate your "current" grade at any time in the course. You can be provided with a sheet to estimate your grade after the first midterm but you can also estimate it yourself if you look at the percentages for each aspect of the class.

### **Exam dates:**

Please reserve these dates; there are no make-ups

Lab Final:

Week 11 during the usual lab session period

Midterms

Physics 2A

Tues of Week 5

Tues of Week 8

Physics 50

Monday of Week 5

Wed of Week 8

Final Exam

See school calendar

See Deanza School Calendar for other important dates (adding, dropping, withdrawing etc...)

**B) Course Goals:**

Critically examine new, previously un-encountered problems, analyzing and evaluating their constituent parts, in order to construct and explain a logical solution utilizing, and based upon, the fundamental laws of physics

For the lab: gain confidence in taking precise and accurate scientific measurements, analyzing the data using various methods, and presenting results

Students should be able to

a) identify and use fundamental ideas to answer conceptual questions clearly

b) systematically use fundamental equations that are useful in solving problems including deriving important theorems

**Basic description of the course... a typical lecture session**

The "lecture" time will consist of formal instructor-led lectures, as well as collaborative work among students. It is important to obtain and understand all class notes as not all of the material in the class is found in textbooks, and **usually 90% of the problems on the quizzes and midterms will involve material that was discussed in class in detail.**

The instructor's class notes will be recorded in zoom for zoom classes only.

It is important to review notes nightly in order to identify items that you do not understand. If you don't understand what is happening in class, then make a special note to yourself (in a right hand column of your lecture notes notebook) in order to get help from someone including possibly the instructor.

If you do not understand very well the material covered during class, then you are unlikely to do well on quizzes and tests. The textbook should be seen as one of many resources that supplement class instruction; studying some problems / ideas from the textbook problems is only part of being prepared.

**Students are expected to learn and understand how to use the fundamental laws and theorems / principles discussed in class and also how to derive any theorems / principles from fundamental laws. Note: fundamental laws CANNOT be derived (proven) by other ideas or laws (that is what "fundamental" means). Students are also expected to know and understand the human-created definitions used to describe nature.**

**When giving answers students are expected to always SHOW WORK and give an analysis or argument based on fundamental principles / laws or definitions unless otherwise indicated ... like if a question says explicitly "Just Give Answer"**

### **C) Calculation of Grade:**

Please keep a record of all of your grades as this will make it easier for me to assess what your "current" grade is. You can estimate your own "current" grade using the chart below.

#### **For classes with lab Physics 2 and 4 series**

23 % Quizzes (all will be graded with lowest quiz grade counting for half weight or less based on chart:)

Lowest Quiz score counts for

00% for students attending 20 to 40 one hour sessions at Student Success Center

10% for students attending 16 to 19 one hour sessions at Student Success Center

20% for students attending 12 to 15 one hour sessions at Student Success Center

30% for students attending 8 to 11 one hour sessions at Student Success Center

40% for students attending 4 to 7 one hour sessions at Student Success Center

50% for students attending 0 to 3 one hour sessions at Student Success Center

25 % Final: (60 % of final is on post-midterm 2 material and 40 % on pre-midterm 2 material)

11 % Midterm 1:

11 % Midterm 2:

5% LS = Lecture Summaries (all will be graded but not equally weighted)

2% VS = Video summaries of material for each week

7 % THW = Textbook HomeWork (all will be graded but not equally weighted) including Multiple Choice (2.0 % out of the 7 % for Multiple Choice if there are any multiple Choice questions)

3 % CS = Chapter Summaries (all will be graded)

13 % to be given by Lab Professor

**BONUSES for complete work**

2% THW Bonus (must get 70 % on each assignment) OR 1.5% THW Bonus if average is over 75%

1% CS Bonus (must complete 90 % off all assignments with score of 70 % or more on each assignment)

1% LS Bonus (must complete 90 % off all assignments with score of 70 % or more on each assignment)

0.5 % for completion of your overall course grade estimation sheet that will be provided after midterm #2

minus Penalties for lateness / unexcused absences

#### **For classes without lab (Physics 10 and Physics 50)**

Final: 25 % (2/3 of final is on 2<sup>nd</sup> half (post midterm material) of class, 1/3 of final on 1<sup>st</sup> half)

Midterm: 20 %

Quizzes 40 % (all will be graded with lowest counted for half of the others)

PC = Practice in Class Work 4 % (approx 25% of assignments (2/4 points) graded for content , 75 % for effort

VD = End of Week videos 2 %

CS = Chapter Summaries 2 % (all will be graded)

THW = Textbook HomeWork 7 % (approx 25% of assignments (3/7 points) will be graded for content, 75 % for effort)

**BONUSES for complete work**

2% THW Bonus (must get 70 % on each assignment) OR 1.5% THW Bonus if average is over 75%

1% CS Bonus (must complete 90 % off all assignments with score of 70 % or more on each assignment)

1% LS Bonus (must complete 90 % off all assignments with score of 70 % or more on each assignment)

0.5 % for completion of your overall course grade estimation sheet that will be provided after midterm #2

minus Penalties for lateness / unexcused absences

Typically 15 - 20 % of students will get an A, 30 % will get a B, 35 % will get a C and the remainder will get a D or F grade. There have been classes where 25 % get A grades and also classes where only 10 % get A grades.

There is no “extra” work that can be done at the end of the class to try to improve your final course grade. It is also considered inappropriate to pressure instructors to give a grade that is higher than the grade that was earned based on the chart above.

#### **D) Materials Needed**

Straight Edge, Calculator, Protractor. Also helpful are Erasable Pen, Circle Template, Regular 8.5 by 11 inches white copy paper for doing HW and other assignments that are collected.

(Calculators are not allowed on any quizzes, midterms or the final. They can be used on THW, PN, Lab and other class work.)

**NO TYPED WORK or ELECTRONIC WORK IS EVER ALLOWED IN THIS CLASS: Work must be done “by hand” ON PHYSICAL BLANK (No ruled lines) PAPER**

#### **E) through G): assignments**

**All assignments are to be done on unruled blank copy paper (no horizontal ruled line-paper)**

**Any late assignment that is submitted before midnight, is worth a maximum of 50% credit.**

**Most work will be submitted online in canvas but some will be collected in class on actual physical paper. You will be told if you have to turn in physical paper.**

**Work is due before beginning of class except for Lecture Summaries which are due at midnight**

**Check canvas for due dates.**

#### **E) Lecture Summaries (LS)**

150 to 200 words on 1<sup>st</sup> page by hand

Related example on 2<sup>nd</sup> page that you create

These will be turned in online due at midnight on day of lecture

See sample on canvas

#### **F) Chapter Summaries (CS)**

The chapter summary is basically a collection of the main ideas in the chapter that you read from any equivalent textbook or online source, organized in any way that makes sense to you. Feel free to make outlines, charts, diagrams, flowcharts, venn diagrams, color etc... these must be hand-written (no computer) on blank sheets of paper (no lined paper)

You are required to do a minimum of 3 sides of paper (**3 completely filled ! pages**) for each chapter and submit it when it is due. You can use more pages if you need to and pages must be stapled (vertically in upper left corner – in the top left 1.0 square cm of upper left corner - so that the pages can be turned easily).

You must use unruled (no horizontal guidelines) white regular-sized copy paper; there is a 10 % penalty for the wrong paper. It must be a minimum of 300 words (most students do about 500 words and 3 pages). You can include diagrams but this is not a substitute for the word requirement.

Penalties for not turning CS or ontime

CS submitted after midnight of the due date will not be accepted.

There is a Bonus (see above) for turning in all of these assignments

#### **G) Textbook HomeWork (THW)**

##### **i) general description**

These assignments are in canvas you will be given a due date in canvas.

It is critical to do all of your THW. The attention you give to the assignments is crucial to your success in this course. Doing physics is a skill that you develop, and practicing that skill is necessary. Don't just "do" the homework; instead think about what each problem is trying to teach you and try to organize those things in your own brain if possible, or write down these things. Your understanding should improve slightly with each question or problem, or else you aren't really learning (you are just "doing").

It is possible to "do" all of the THW and still NOT get a good score on a quiz or midterm that involves that THW material. That is because you didn't learn/understand the underlying principles.

In each chapter you will be given approximately 8 Conceptual Questions (CQs) that require a clear written explanation and approximately 10 Quantitative Problems (QPs) that require a mathematical solution.

CQs are more challenging and are often more important than (QPs), because you need to have "true" understanding in order to answer a qualitative question whereas a quantitative question allows you to "fake" your way through to an answer by using some equation.

There may also be multiple Choice Questions depending on your class / Chapter.

All assignments are in the THW folder in canvas.

If there are no Multiple choice questions for your class, CQs will count for about 60 % of the grade for the THW. QPs will count for the remaining 40 %.

If there are Multiple choice questions for your class, CQs will count for about 40 % of the grade for the THW. QPs will count for 35 % and Multiple Choice will count for the remaining 25 %

Your work must be your own. You may consult with students after you have made an attempt to do THW problems on your own. You may not copy another person's THW. Instead, contact them for help, and then do your own work. If your THW has been obviously copied from another person's THW then you will be guilty of cheating and reported to the appropriate authorities (see below). The school's honor code is in effect on this matter.

In most cases, the final answers to the odd THW problems are in the back of the text. We will not have much time in class for going over THW problems; see a tutor or email me for help if you get stuck on a particular THW problem.

## ii) Format of THW (for both conceptual questions AND quantitative problems)

There is a 15 % penalty for each aspect (indicated below) of the required format that is not followed.

a) Questions are to be done on **BLANK white copy paper (no ruled lines on the paper)**.

**Divide each paper that you use into two vertical columns and do one or more questions / problems in each column (see Formats document for sample THW)**

b) Each question / problem . multiple choice must be labeled with a circle around the Question or Problem number like this (OQ3) or (P17).

c) Each question / problem / multiple choice must be accompanied by a physical diagram showing matter or energy ( a graph or an arrow representing a vector is NOT a physical diagram; these are abstractions that represent something physical ).

**Repeat: no diagram means no credit** for your THW grade.

Physicists use diagrams to build intuition about physical situations and make geometry clear to themselves or other people trying to understand the question / problem involved.

Very infrequently there may be a question that is very mathematical and makes no physical reference (question does not mention any physical object like a sled, dog, book, electric field, engine, light ray, electron, ocean, person, table, rocket.etc...). **In those cases create your own physical situation.**

The diagram of the physical situation makes your homework more useful as a stand-alone document that you can review without having to refer to the text. The diagram also helps you make connections between fundamental ideas and physical situations – often the first and critical step in solving a problem. See sample THW

The diagram may **NOT be an abstract mathematical diagram (like a vector diagram, graph, or free-body force vector diagram).** It must be a diagram of the physical situation and therefore it must involve matter/energy/fields.

### iii) Additional requirements for Conceptual Questions:

In answering a question, **use reasoning that includes (often begins with) fundamental ideas of nature / physics definitions created by humans.** Many people can answer a question and actually NOT understand the reasoning behind their own answers. Sometimes a question can be answered by using a proof by contradiction. Students often do not receive credit for Conceptual Questions because they fail to give a logical argument... instead they just given an answer that could be interpreted as a guess.

Your ability to answer conceptual questions is the “real” measure of your understanding. You may want to see if you can tell your explanation to a friend / parent / fellow student in order to gauge if your answer makes sense.

### iv) Additional suggestions for Quantitative Problems:

- a) present the given information,
- b) Establish coordinate system (+x, +y, and +z, and location of origin if needed) and identify any physical systems that principles are being applied to (for example: system can be just a book, or book and earth, or book earth and table,...)
- c) Usually begin with fundamental laws / theorems or definitions.
- d) write one equation under the other as you apply various physics principles or mathematical steps
- e) put a box around your final answer for each part ( like a), b) , c) etc.. ) of the question.

There is a sample THW in canvas so you can see the allowed format. The work must be neat, in a dark pen or pencil, and relatively large so that it is easy to read.

If you have handwriting that is difficult to read then use large printed letters.

### v) How to turn in THW and other Assignments:

Assignments (THW, CO etc...) will be due at the beginning of either face to face or zoom class (except for Lecture Summaries which are due at midnight. Due times will be given in canvas.

### vi) Penalties for not turning THW ontime

**THW submitted after midnight of the due date will not be accepted. 50 % credit is given for work turned in after the due time but before midnight.**

### vii) Grading of THW

You do **not have to copy the questions** to get full credit but **a physical diagram is required** for each question / problem. (see above for required format). There is a 100 % penalty (no credit) for any question or problem without a physical diagram.

THWs are graded based mainly on overall effort (80 % effort and 20% content)

Conceptual Questions on the THW are usually more difficult for students (since they require “true” understanding) and will have greater weight (60/40) compared to quantitative problems.

Make a serious effort in answering conceptual questions and get help if you can't answer.

Put your name in the upper right side of the assignment.

Assignments without a staple (upper left corner) create problems... 10 % penalty (Buy a small stapler)  
Assignments with no name in upper right corner create administrative problems: 10 % penalty

### **viii) THW Grade Bonus**

Any student who submits every homework (including THWs not graded) and get a 70 % score (or higher) on all graded textbook homework receives a **2.0 point** bonus on the final grade for the class. (score is 1.7 points if only one assignment is below 70 %). A student who averages over 75 % gets a **1.5 %** bonus on final grade for class. Students can get either 2 %, 1.7 % or 1.5 %.

### **H) Laboratory Notebook (only for lab classes)**

Laboratory experience is critical for any person entering a scientific or technical field. All lab reports should be written by each individual student even if the lab is done with other students. Lab reports will emphasize error analyses; an experiment without error analysis has little value. You will be taught how to do proper error analysis using a variety of techniques.

Students must be ontime for lab. If you are late then you lose points proportionately for the time you are late. You are not allowed to receive credit for a lab if you are more than 30 minutes late.

Latenesses and absences:

Each lab that is missed results in a % deduction of the overall grade for the lab part of the class

- 1 missed lab: 5 % deduction off of lab grade
- 2 missed labs: 15 % deduction off of lab grade
- 3 missed labs: 30 % deduction off of lab grade
- 4 or more missed labs: 50 % deduction off of lab grade

For each lab you will have two sections: (this will be explained in lab)

a) **10 points.** Lab Notes/Skills Section (called section "0")

Here you keep notes for the lab given by the instructor during the first 15 - 40 minutes of lab.

b) **90 Points.** Lab Report Section

Here you will write a formal lab report including any or all of the following: introduction, theory, hypothesis, raw data, presentation of error of each raw data measurement, data analysis, graphs, error analysis, discrepancy, presentation of result with error for calculated quantities, specific conclusion and any 1D graphs, and general.

You will be shown how to write the lab reports during the first few weeks of the class.

Your lab reports will be written in the lab and your lab notebooks will be graded. Lab notebooks stay in and "belong" to the lab. No extra time will be allowed to write the lab report; the report must be finished by the end of the lab session.

You should copy each lab report after you are finished as a proof of completion in the unlikely event that your lab is lost (extremely unlikely).

There will be approximately 10 labs (unless holidays). 2 lab reports will be graded for content. 8 more lab reports will be graded for effort. You will not be told which ones will be graded for content before they are graded. There are no makeup labs. If you miss a lab that is graded for content and it is excused (see below for definition of "excused"), then the instructor will choose the lab prior to the one being graded as a substitute lab to grade for content.

Lab Final: you will be given a lab final on the last lab day. You can use any equipment, your lab notebook (given to you prior to lab final) and a calculator.

### **Grading of Lab part of class)**

35 % Lab final written test

25% Lab final physical equipment test

40 % Lab Reports (all will be graded but not equally weighted: 2 labs will account for 20% and the remaining 8 will count for 20%)

### **I) Video Summaries**

3 minute video must be produced at the end of each week on any topic that was covered in the previous week... due Sundays at midnight

### **J) Attendance and Tardiness**

You are expected to be here at the beginning of each class, every day, for the rest of the quarter. If you must be absent then provide physical documentation to have the absence excused (see below).

You must sign the attendance sheet every day with your initials (or login to canvas for online zoom class).

If you come late and miss more than 20 percent of a class, then you are considered absent, otherwise you are just considered late. Your daily LS work may be used to determine if you participated in class enough to receive credit for attending; missing LS work will result in your being considered absent for the class even if you were physically present.

It is important to experience the discussion of physics with the instructor and classmates. Therefore there are penalties for being late or for unexcused absences.

**Non-summer classes:** Points off of final course grade

1 <sup>st</sup> lateness	0.2	1 <sup>st</sup> unexcused absence	1.0 points
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Additional points off for each further lateness or unexcused absence

2 <sup>nd</sup> lateness	0.5	2 <sup>nd</sup> unexcused absence	1.0 points
3 <sup>rd</sup> lateness	0.5	3 <sup>rd</sup> unexcused absence	2.0 points
4 <sup>th</sup> lateness	1.0	4 <sup>th</sup> unexcused absence	2.0 points
5 <sup>th</sup> and more	2.0	5 <sup>th</sup> and more unexcused absence	3.0 points

If you miss 20 % of classes for any reason, then you will not be given a passing grade (D or higher).

**Summer classes:** Points off of final course grade

1 <sup>st</sup> lateness	0.2	1 <sup>st</sup> unexcused absence	2.0 points
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Additional points off for each further lateness or unexcused absence

2 <sup>nd</sup> lateness	0.5	2 <sup>nd</sup> unexcused absence	2.0 points
3 <sup>rd</sup> lateness	0.5	3 <sup>rd</sup> unexcused absence	3.0 points
4 <sup>th</sup> lateness	1.0	4 <sup>th</sup> unexcused absence	3.0 points
5 <sup>th</sup> and more	2.0	5 <sup>th</sup> and more unexcused absence	5.0 points

If you are unable to make it to class ontime, on a regular basis, then you probably would do better and be less frustrated in a class with less rigid attendance rules.

If you come very late (more then 2 mins late), then come to the front of the class, as soon as you walk in, and sign the late sheet (not necessary in canvas).

If there is an accident on the roads, then document with a photo and live date on your phone camera, and offer that as evidence of an excusable event.

## **Some FAQs:**

### **Do I need a doctor's note or equivalent for an excused absence ?**

Yes. And you must submit by email a copy of the note to class and it must be within 24 hours of the start date of the excused absence period. For example: if you must be absent for two days to attend a college fair happening on Monday and Tuesday, then the note is due Wednesday.

### **Will I be dropped if I don't attend the first few classes ?**

If you miss the first and the second day of class then you will be dropped.

### **K) Waiting List and Adding into the class.**

If you are on the waitlist and/or not yet enrolled in the class (and choose not to come to class) then your absences and tardies count for 50 % compared to students who are enrolled. Other penalties associated with not being present because of not being registered are also reduced by 50 % . (for example a missed quiz only counts for ½ of a zero grade and not a full zero quiz grade)

I will accept several students over the class limit up to the end of the second week.

### **L) Midterm**

There will be 2 midterms in this class. No calculators will be allowed in order to guarantee that everyone has an equal chance at the exam; learn to approximate numerical answers using basic arithmetic.

Students will be allowed to earn back points for questions that were missed on the midterms by writing a "reflection" document. You will be told the specific formal or the "reflection" document. Students can earn back up to 20 % on midterm #1 and 20 % on midterm #2

There will not be make-up midterm. If you miss a midterm and it is unexcused (see below) then the score is a zero. If you miss a midterm and it is excused (see below), then a substitute grade will be given that is equal to the average of the final exam grade and your quiz grade average.

If you are tardy for a quiz, midterm or final, you will not be given additional time. No calculators will be allowed for any quiz, midterm or final. Calculators are allowed for the lab final.

### **M) Quizzes**

There will be approximately 6 quizzes in this class of about 15 minutes each at the start of class. Occasionally there may be a "1/2 quiz" .... Two 1/2 quizzes are equivalent to one regular quiz.

Quizzes are given nearly exactly at start of class. Students read the quiz without writing for 3 or 4 minutes and then use the remaining time to write the solutions.

Quizzes will be on material from (Quiz day minus 10 days) to (Quiz day minus 3 days). For example if a quiz is on Thursday July 19<sup>th</sup> then it would be on lecture material from Monday July 9<sup>th</sup> to Monday July 16<sup>th</sup>.

Quizzes emphasize material in the prior days of class lecture (not including the last two days). There will not be make-up quizzes. If you miss a quiz and you are not excused (see below) then your score is a zero. If it is excused (see below) then the missed quiz grade will be the average of your other quiz grades. The lowest of your quiz grades will count for half the weight as other quizzes. (Note: the lowest quiz grade cannot be a zero given for cheating...)

### **N) Final:**

The Final exam will be given as per the school calendar (unless summer class). There will be no make-up final. You may bring 2 sides of regular paper with notes and equations to the final exam. You must bring a photo ID to the final exam and show it to the instructor during the test if asked. If you are late to the final then

you will NOT be given additional time. No calculator is allowed on the final. You are only allowed a single pencil/pen and a straight edge like a ruler.

Final exam is 60 % on material after midterm #2 and 40 % on material before midterm #2.

If the class as a whole cannot take the final exam because of extraordinary circumstances (earthquake / power outage etc...and cannot be rescheduled), then your average midterm grade, (with reflection points) will be used for your final exam grade

### **O) How work will be graded (THW, Quizzes and Tests) and Cheating**

On homework, in-class quizzes, midterms and final, you must **show all your work** to receive full credit. You must show logical steps using laws / theorems or definitions. This includes qualitative questions – do not simply restate the question or leave out critical thinking steps. Usually work will be returned within one week. If you need to use material that you are submitting, then copy the work prior to submitting so you can use it even if I still have it.

Your work must be distinguishable from a student who guessed !

**Do not give more than one “answer”** as the grader will not choose the correct answer out of two answers for you ! If you put down two answers, you automatically lose 75 %.

Solutions should show your step-by-step reasoning to obtain the solution. No credit will be given if no work is shown even if you obtain the correct answer to the problem (accidentally or not).

Usually you will solve the problems algebraically before “plugging in” numerical values... but sometimes it is worth it to plug in numbers for an intermediate step. Be certain to include the appropriate units with your answer and proper significant figures.

Note: If there is a dispute in the grading of any exam homework, quiz, or exam I will consider looking at it a second time only if it is handed back to me within 2 school days after I return it, and if there is a neatly written appeal. You cannot make an appeal immediately after a quiz is given back to you (at least look at the solutions carefully)

Save all of your graded work in case of any lost records of student grades.

### **Cheating**

I have caught about a half dozen students cheating over the last 2 years. Please don't try it. Better to just try hard to actually learn the material.

- a) Quizzes: A student found cheating on a quiz will receive a zero for the quiz
- b) Textbook HomeWork, Chapter Summaries, Labs, PN work have same policy as quizzes applied to work that is graded. (Note that not every THW, CS, Lab, or PN is graded)
- c) Midterm and Final: A student found cheating on a midterm or final will receive a zero for that midterm / final.

There are no other penalties for cheating than being given a zero... it is actually illegal to do that.

### **P) Letter Grades for the course**

The calculated percentage will be rounded to the nearest whole number. Letter grades will be determined as follows:

A+: 97-99% A: 93-96% A-: 90-92%

B+: 87-89% B: 83-86% B-: 80-82%

C+: 77-79% C: 65-76%

C grades will be also be given to students between 60 and 64% if a 70 % average is obtained on the THW grade and a score of 50 % on the final exam

C- grades cannot be given at Deanza

D: 55-64% F: 0-54%

The grading scale shown above is firm. Although unlikely, all tests and assignments may be curved, slightly. Being close to a grade does not entitle a student to that grade (89.4% is a "B+", 89.5 % is an A-).

Typically 15 - 20 % of students will get an A, 30 % will get a B, 35 % will get a C and the remainder will get a D or F grade. There have been classes where 25 % get A grades and also classes where only 10 % get A grades.

### **Q) De Anza College Academic Integrity and Cheating Issues**

The following types of misconduct for which students are subject to disciplinary sanctions apply at all times on campus as well as to any off-campus functions sponsored or supervised by the college: cheating, plagiarism or knowingly furnishing false information in the classroom or to a college officer. Copying another student's work or problem solution, or copying from a "solution manual" both fall into the above categories and may result in disciplinary action.

### **R) Things to do to give yourself a good chance of doing well.**

**I may send to you suggestions from previous students about how to do well in this class.**

Also, you should

- a) Realize that physics is based on key principles that build upon each other, and the reasoning that follows from them. You cannot succeed by trying to memorize certain procedures or equations; it just won't work. So read the text and listen to lectures with this in mind. Keep asking yourself " what is the fundamental idea here ?"
- b) Review Lecture notes and regular HW assignments . It is extremely rare for a student to be able to do well in physics without doing assignments. Ask for help electronically if you don't understand lecture or any assignments.
- c) Attend every class as it is difficult to learn physics without an interactive dialogue with an instructor who can help you understand the particular difficulties (conceptual or operational) that you are having. Learn your class notes well; the course emphasizes material covered in class especially on quizzes
- d) Read the chapter before you come to class and take notes on things you don't understand while reading.
- e) Make sure that you have the necessary math background.
- f) Do not allow yourself to fall behind as the situation will likely get progressively worse
- g) Ask questions in class when you don't understand and take advantage of any office hours that are set up
- h) Plan your schedule so that you have enough time to do the class. Consider reducing your work hours or number of classes.
- i) Take advantage of the well organized Math / Science Tutorial Center, EOPS, and the Student success and retention program.
- j) Work with other students so you can share their insights. Be mindful however of the plagiarism and cheating (see above).
- k) talk to another student who has taken any of my classes

### **S) Other Resources**

You may choose to look at these other texts which cover the same material

Alternate Texts:

Knight, Physics for Scientists and Engineers

Giancoli, Physics

Hewitt, Conceptual Physics

Matter Interactions (forget authors' names)

Holt (Publisher), Physics

Feynman Lectures on Physics

Khan Academy videos

Walter Lewin video lectures and other online lectures  
And many more....

### **T) Excused Absences:**

A class, lab, or quiz, midterm, PN work is excused if

- a) you inform the instructor before the class AND
- b) you have a doctor's note, a legal notice, a death in the family, or other documentation of "extraordinary circumstances" (to be judged by the instructor).

### **What is an extraordinary circumstance ?**

An extraordinary circumstance would be an absence that you must take because otherwise it would cause a great or irreversible hardship. The instructor determines when an excused absence is considered an "extraordinary circumstance". A wedding or a car accident would be examples of extraordinary circumstances.

### **What do if you have a period of excused absences (or even one excused absence)**

If you are excused from class, that does not excuse you from turning in work that is due that day in class (unless the excused absence prevented you from doing the work.. like a medical procedure... but not like a wedding)

### **Making up the missed work**

You have 3 class days from the end of the excused absence period (if several days of sickness for example) to make up the work that was missed

### **Appendix 1: Important dates:**

**Other important dates:** Double check the dates below with admin as it could change from year to year.

Students should see their own personal "My Portal" webpage for important dates like the last day to add and withdrawal dates. Here are a couple of key dates (double check these on your portal) since these dates can change from term to term.

### **Last Day to Add (Saturday of Week 2)**

Students who have not added a class by this date will not be able to remain in class (and cannot add the class after this date – no exceptions by school rules ). Even if a student has an add code, the code will expire after that date, and she / he will not be allowed to register!

### **Last day to Drop without having to pay for class (Sunday of Week 2)**

There is no grade of record issued for students who drop on or before this date. Students also do not have to pay for the class if they drop by this date. Such drops do not count towards the "three attempts" limit. Students who do not drop by this date must receive a grade, which could be a "W" (withdrawal). "W"s now count toward the "three attempts" limit.

### **Last Day to Withdraw with a "W" (Friday of Week 8)**

A students who do not withdraw on or before this date must receive a letter grade, but cannot receive a "W". A students should evaluate her/his status before this date – if a student is not doing well, neither the student nor I will be able to withdraw the student after this deadline. Withdrawing from a class is the responsibility of the student and you must do it before the deadline. EW (Excused Withdrawal) grades may be available.

### **I) Questions on Lecture (QL Work):**

#### **NOT for Fall 24 classes**

You will be given a chart that indicates the days that you have do your QLs (It's about 1 QL every 3 weeks).

### **Format of the QL:**

a) At the top: indicate day and date of the lecture that you are doing your QL for (which is not the same as the date that you turn it in).

For example: If you had to do a QL for a lecture that occurred on a Thursday then you would turn that QL

in on Friday (but the top of the QL would have Thursdays date). There is a 15 percent deduction if you leave out these 2 pieces of information since it will make grading difficult.

b) The work must be done in pen, and on regular 8.5 x 11 blank white paper (it must fit into my scanner). I will not accept work on paper having the wrong size since it must be able to be scanned in a printer. Divide your paper into two sections vertically. The left side should be 2/3 of the paper, and the right side 1/3 of the paper. Choose some aspect of the lecture that you have some concerns with or are simply interested in. On the left side copy the notes from lecture that you have a question about. On the right side put the question that you have. This is an excellent chance to show your interest and creativity.

I will answer the question (on your page) and email back the QL (with answer included) to you and to every other student. There will be two to four QL quizzes based on the QL material.

The QL's and my responses will be emailed to all students and will be helpful as part of a study guide. Sometimes I will review the QL's that are submitted at the beginning of lecture so you can expect that all students will see your QL work ! Students are expected to review the QLs online.

The QLs are a good chance for you to test your general understanding and to review.

### **Missing your QL date**

If you miss your QL date, then turn it in within a 3 class days and you can receive half credit

**Student Learning Outcome(s):**

- Examine critically new, previously un-encountered problems, analyzing and evaluating their constituent parts, to construct and explain a logical solution utilizing, and based upon, the fundamental laws of mechanics.

**Office Hours:**

M,W 1:30 PM - 2:00 PM

T,TH 12:30 PM - 1:30 PM

F 9:00 AM - 10:00 AM

S43 Student Success Center

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