

COURSE INFORMATION SHEET/SYLLABUS
Tuesday/Thursday section

Instructor: S. Vincent Lloyd
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Office hours: Monday 11:00–12:00 pm
Tuesday 2:00–3:00 pm
Wednesday 11:00–12:00 pm
Thursday 2:00–3:00 pm
Friday 10:00–12:00 noon

Office location: Physics 117H, just north of the Humanities Building.

Dates: Tuesdays & Thursdays, Feb. 13– June 7

Holidays: Monday Feb. 19 (Washington's Birthday), Monday May 28 (Memorial Day).

Spring break: April 9–13.

Course Description

Welcome to physics! Physics 11 is an introduction to the great laws of nature that underlie everything that goes on in the universe. It is intended for non-science majors and science majors lacking a background in physics. The approach is mainly conceptual rather than mathematical and only very simple mathematics is employed. There are no math or science prerequisites.

Credit for the 3 units of Physics 11 is fully transferrable to the California State University system. Credit is fully transferable to the U.C. system unless you also take higher-level physics courses.

This is a 3 unit course. That means that students are given credit for 9 hours of work every week. (Each unit represents three hours of work.)

Course Objectives

- distinguish between Newton's Laws of Motion, work and energy, and momentum.
- explain the significance of Newton's Laws of Motion, work, energy, and momentum.
- explain conceptually/qualitatively physical phenomena in terms of specific principles of physics.
- make qualitative predictions as to the outcome of a natural physical event using the physics laws of nature discussed in lecture and text.

Student Learning Objectives

Given a description of a physical situation (floating ice cube, falling body...) the student should be able to recognize the basic physical principles involved in order to correctly answer conceptual questions.

Required textbook

Conceptual Physics by Hewitt (9th edition or later).
Recommended: *Thinking Physics* by Epstein.

Attendance and Withdrawal

Regular attendance is expected of every student who wants to be successful in this course. Keep in mind that coming to class *by itself* will *not* earn you a passing grade, while *not* coming to class makes it exceedingly difficult to pass the course. If you can't make it to class one day, check the instructor's website to see what you have missed.

The instructor *may* drop you from the course if you miss **more than 3** classes. Notify the instructor if you have to miss two or more classes in a row. If you decide *not* to complete the course, it is *your* responsibility to drop the course on-line (if it is before the last day to drop). Otherwise, you may end up with an "F" for this course on your transcript.

Important dates

Last day to drop without a "W"

Last day to drop with a "W"

Friday, Feb. 23**Friday, May 11**

A "W" (withdrawal) means that you attempted the course but did not complete it; it doesn't affect your Grade Point Average (GPA), but a large number of Ws will cause you to be put on Progress Probation. If you stop attending after the "W" date you will probably receive an "F" for the course. If an emergency comes up at that time, ask the instructor for an Incomplete.

Assignments, Exams, and Grades

Homework. There will be 12 Problem Sets (worth **10** points each).

Two students can do an assignment together, but no more than two. If you work with a partner, just turn in one paper. Do not copy from a third person or let someone else copy your work.

NO LATE HOMEWORK IS ACCEPTED.

Note: The homework is about 20% of your grade. NOT DOING THE HOMEWORK WILL LOWER YOUR COURSE GRADE AT LEAST ONE FULL GRADE.

HOMEWORK FORMAT:

1. Use standard 8 1/2 x11 inch paper.
2. Write your name, section time and chapter number on the upper right hand corner of the paper.
3. Always explain your answer in a complete sentence, even if you are not explicitly asked to do so.

Speech.

With a partner, you will make a 2-minute speech about a famous physicist of the past. This is a 2-person speech; you **must** have a partner. First you will prepare an outline and bring it to the instructor during office hour. After your outline is approved, you will be ready for your speech. A form for the outline is attached. The speech is worth **30** points (about 5% of your course grade).

If you or your partner are absent on the day your talk is scheduled, you will be rescheduled for the next available day, if one is open. If you give your talk on the scheduled day, you will be awarded bonus points. The number of bonus points equals the number of whole weeks left in the semester.

Note: The use of notes is **not** allowed during the talk.

Quizzes. There will be either a quiz or an exam after most chapters. There will be 8 quizzes worth **14** points each. Bring a **Scantron 882** for each quiz.

There are **no** make-ups for quizzes; however, the lowest quiz score will be dropped, so you can miss one quiz without penalty.

If you miss a second quiz, you can make up the points by doing a museum visit as described under Extra Credit on the next page.

Exams. There will be 4 exams worth **100** points each (together making up 50% of your course grade). Bring a Scantron No. **883** for each exam.

During the exam, you are allowed to use notes written on **one** standard 3x5-inch index card, written **in your own hand**. It has to be a **pre-cut** file card or index card; pieces of paper you cut out yourself are *not* allowed.

The lowest exam score will be dropped, so there is no penalty for missing one exam. If an emergency causes you to miss a second exam, you may, at the instructor's discretion, be allowed to take an **oral** make-up exam. *No* notes are allowed during the oral exam. The oral exam must be taken before the next regular exam date.

If you have a disability that affects your ability to take exams, contact the Special Resource Center well ahead of the exam date to discuss special test-taking arrangements.

Extra credit

You may go to **one** of the following two science museums for up to 30 points extra credit. In addition, you may make an additional visit to make up for a quiz you have missed if you miss more than one quiz.

Griffith Observatory

Location: Griffith Park; go up Vermont Ave. to the end. Parking is \$4 an hour.

DASH Observatory bus (50¢) leaves from Vermont/Sunset station on the Metro Red Line.

Website: griffithobservatory.org.

Hours: Tuesday–Friday: 12 to 10 pm. Saturday & Sunday: 10 am to 10 pm.

Closed Mondays. Closed Thanksgiving Day (also Christmas day).

You will need to get a proof of attendance with a **date** on it: Options:

- (1) Get a proof of attendance from one of the friendly staff.
- (2) Buy a planetarium show ticket.
- (3) Buy something at the store or the cafe.

A BROCHURE IS *NOT* ENOUGH. A PHOTO IS *NOT* ENOUGH.

California Science Center

Location: Exposition Park near the Coliseum. Open daily 10–5.

The museum is free but parking is \$12 (cash only).

Website: www.californiasciencecenter.org.

Be sure to get a proof of attendance with a **date** on it. Options:

- (1) Buy a ticket for the Space Shuttle (\$2) (during peak periods).
- (2) Make a small donation and get a receipt.
- (3) Buy something at the store.
- (4) Buy a ticket for the IMAX theater.

A "SCIENCE PASSPORT" IS *NOT* ENOUGH. A BROCHURE IS *NOT* ENOUGH.

A PHOTO IS *NOT* ENOUGH. A PARKING PERMIT IS *NOT* ENOUGH, EITHER.

Rules for all extra credit

1) You can go to Griffith Observatory once *or* the California Science Center once for up to 30 points extra credit.

2) Write a **1-page report** and explain 15 things you learned about **science or spaceflight**.

This is an individual report; everyone must write their own report in their own words.

Be specific: tell *what* you learned, not what you learned *about*.

Acceptable: *I learned that the Apollo command module carried three men to the Moon.*

Not acceptable: *I learned about the Apollo program.*

You get 2 points for every specific fact that you describe in your report, up to a maximum of 30 points.

3) Attach **proof of attendance** *with a date on it*.

A BROCHURE, PARKING PERMIT, OR PHOTO IS *NOT* SUFFICIENT.

4) Turn in your report no later than the 14th week of the semester.

"Turning it in" means printing it out and handing it to the instructor (or leaving it on his door); email is *NOT* enough.

NO EXCEPTIONS—not for illness, computer malfunction, natural disaster, or alien abduction!

Grading Scale

Grade points	
12 Problem sets	120
Speech	30
7 of 8 quizzes	98
3 of 4 exams	300
Total	548

Tentative grading scale

>90% \pm 2%	A	493 \pm 11
>75% \pm 2%	B	411 \pm 11
>60% \pm 2%	C	329 \pm 11
>50% \pm 2%	D	274 \pm 11
<50%	F	<274



The grade breakpoints shown above are approximate; they will be adjusted at most 2% up or down at the end of the semester. This means that in order to guarantee an "A," for example, you need to get at least 92% or 504 points.

GRADE RECORD	Points	Possible Points
Problem set 1	_____	10
Problem set 2	_____	10
Problem set 3	_____	10
Problem set 4	_____	10
Problem set 5	_____	10
Problem set 6	_____	10
Problem set 7	_____	10
Problem set 8	_____	10
Problem set 9	_____	10
Problem set 10	_____	10
Problem set 11	_____	10
Problem set 12	_____	10
Quiz 1	_____	14
Quiz 2	_____	14
Quiz 3	_____	14
Quiz 4	_____	14
Quiz 5	_____	14
Quiz 6	_____	14
Quiz 7	_____	14
Quiz 8	_____	14
/ess: lowest quiz	_____	14
Exam 1	_____	100
Exam 2	_____	100
Exam 3	_____	100
Exam 4	_____	100
/ess: lowest exam	_____	100
Speech	_____	30
Extra credit	_____	
Total	_____	548

Grading Policies. The college's standard grading policies can be found on-line at:
www.elcamino.edu/admissions/grading.asp

Class Policies

Food and drink. Please do not bring drinks other than water into the classroom; coffee and soda spills stain the carpet. Do not eat during class.

Manners. Treat other students and the instructor with respect and courtesy. Do not talk while another student or the instructor is speaking.

Time deadlines. Homework is due at the beginning of class on the day it is due. An assignment has to be handed to the instructor during class or office hour or clipped to his office door. Do *not* drop off assignments in the division office. emailed assignments are *not* accepted. Homework is *not* accepted after the due date.

Incompletes in the course. An "incomplete" grade will be given only when the student is prevented from finishing the course on time because of an *extraordinary, unexpected* circumstance. Students receiving an incomplete must be doing passing work up to that point. If such an occurrence happens, it is the student's responsibility to contact the instructor immediately to explain the situation and make arrangements to complete the course.

Academic integrity. The following acts are considered dishonest and are not allowed:

On *homework assignments*: copying someone else's work, making up data, or reporting that you saw something that you didn't see. Copying someone else's homework is against the rules in the United States. So is letting someone else copy your work.

On *exams or quizzes*: copying from another student's answer sheet or using notes other than those allowed by the instructor. Letting someone else copy your answers is also unethical.

Any quiz or exam during which cheating occurs will automatically get a 0 which will not be dropped.

Students who do any of these actions are subject to disciplinary action.

You can read the official college policies at:

www.elcamino.edu/administration/board/boarddocs/AP%205500%20Standards%20of%20Student%20Conduct.pdf

Students with disabilities

El Camino College is dedicated to providing access to education for students with disabilities. For further information, see the El Camino Catalog, Special Resource Center. Students with disabilities should inform the instructor especially if there are medical problems or learning disabilities. Accommodations may be provided as recommended by the Special Resource Center. See **www.elcamino.edu/academics/src/**



COURSE CALENDAR

Week	Date	Topic
1	2/13	What is physics?
	2/15	Ch. 2: Law of Inertia
2	2/20	Ch. 2
	2/22	Ch. 3 Linear motion
3	2/27	Ch. 3
	2/29	Ch. 4: Newton's 2nd Law
4	3/6	Ch. 4
	3/8	Exam 1
5	3/13	Ch. 5 Newton's 3rd Law
	3/15	Ch. 5
6	3/20	Ch. 6: Momentum
	3/22	Ch. 6
7	3/27	Ch. 7: Energy
	3/29	Ch. 7
8	4/3	Exam 2
	4/5	Ch 8: Rotational motion
9	4/17	Ch. 8
	4/19	Ch. 9: Law of Gravity
10	4/24	Ch. 9
	4/26	Ch. 10: Projectile and satellite motion
11	5/1	Ch. 10
	5/3	Exam 3
12	5/8	Ch. 15: Temperature, heat & expansion LAST WEEK TO DROP
	5/10	Ch. 15
13	5/15	Ch. 16: Heat transfer
	5/17	Ch. 16
14	5/22	Ch. 17: Change of phase /
	5/24	Ch. 18: Thermodynamics Last day for Extra credit report
15	5/29	Ch. 18
	5/31	Ch. 35: Special Relativity
16	6/5	Ch. 35
	6/7	Exam 4



TIPS FOR SUCCESS IN YOUR ASTRONOMY COURSEWhile you are away from campus

1. Get a student calendar and put in your exam dates and assignment due dates.
2. Set aside a regular time and place to study your astronomy every week. You are expected to study six hours every week!
3. Make college a priority in your life. For example, don't make appointments during class time.
4. Do your homework.
5. Make flash cards to prepare for tests.

While you are on campus

1. Buy all your Scantron forms the first week so you will have one on test day. Also get a stack of 3x5-inch index cards.
2. Find out where the instructor's office is and when his office hours are.
3. Get to know the tutor. She's in the library on the 2nd floor, west end.
4. Form a study group with others in the class.
5. Take an Academic Strategies class.

While you are in class

1. Get to class five minutes early and review your notes from last time.
2. Turn off your cellphone. Do student 100%.
3. Take enough notes during class so that at the end of the week you will be able to tell what the lecture was about.
4. Raise your hand when something is not clear. The thing will no doubt be unclear to many others in class.
5. See the tutor or visit the instructor during his office hour if you don't understand something.

Thanks to Dave Pierce for suggestions.

"We are not here to worship what is known, but to question it."—J. Bronowski

EXAMPLE: SPEECH OUTLINETopic ____ **George Gamow** __ Outline due_____ Speech Date _____*List your talking points. Don't write out complete sentences. Be neat.***I. Introduction***_Gamow _ is interesting because...***Scientist and popular writer****II. Middle***Give the basics about your subject: what, where, how big? Don't give too many numbers.***A. Life**

1. born Odessa
2. married another physicist
3. moved to US in 1930s
4. had a son
5. died 1968

B. Education and Career

1. University of Leningrad — Alexander Friedmann
2. Copenhagen Institute for Theoretical Physics
3. George Washington U.
4. U of Colorado

C. Accomplishments

1. explained alpha decay—tunneling
2. "liquid drop" model of nucleus
3. Big Bang Theory
4. DNA coding

D. Popular books

1. One, Two, Three Infinity
2. Thirty Years that Shook Physics
3. Three Mr. Tompkins books

III. Conclusion*_____ is important because...***Big Bang Theory and prediction of Cosmic Microwave Background****IV. References***List at least two references with complete URLs.**https://en.wikipedia.org/wiki/George_Gamow**http://www.physicsoftheuniverse.com/scientists_gamow.html*

NAME _____
 Home town _____
 High school _____
 Major _____
 Other info _____

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Approval

SPEECH OUTLINE

Topic _____ Outline due _____ Speech Date _____

List your talking points. **Don't** write out complete sentences. Be neat.

I. Introduction: _____ is interesting because...

II. Middle. Give the basics about your subject: what, where, how big?

III. Conclusion. _____ is important because...

IV. References

List at least two references, with complete URLs.