

PS-29 Classical Physics I Syllabus Fall 2004 Text: Physics With Calculus Volume I by Jeffrey W. Schnick
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 Office Hours: 1:30-3:30 MW (unless otherwise announced), and, by Appointment

Week	Lec	Date	Topics (Recitation topics in parentheses)	Read	Homework
1	1	Mon Aug 30	(9:30-9:50) Mathematical Prelude	Ch 1	Math Videos
		Tue Aug 31	(Pretest) Lab Session #1: Math Test		
	2	Wed Sep 01	Cons. of Energy: Kinetic, Gravitational PE	Ch 2	102: 1,2,3
	3	Fri Sep 03	Cons. of Energy: Springs, Rotational KE	Ch 3	103: 1,2,3
2	4	Mon Sep 06	Conservation of Momentum	Ch 4	104: 1,2,3
		Tue Sep 07	(Problems) Lab #2: En. Conserv. & Math Test		
	5	Wed Sep 08	Conservation of Angular Momentum	Ch 5	105: 1,2,3
	6	Fri Sep 10	1-D Motion -- Definitions and Mathematics	Ch 6	
3		Mon Sep 13	TEST I (Lec+ 2-5, Lab 2)		
		Tue Sep 14	(Derivatives) Lab #3: Collisions		
	7	Wed Sep 15	The Constant Acceleration Equations	Ch 7	106: 1,2; 306:1
	8	Fri Sep 17	1-D Motion (Collision Type II)	Ch 8	107: 1,2,3
4	9	Mon Sep 20	1-D Motion Graphs	Ch 9	108: 1,2,3; 308:1
		Tue Sep 21	(Vectors) Lab #4: Linear Motion		
	10	Wed Sep 22	2-D Motion #2: 2D Constant Acceleration	Ch 10	109A: 1,2,3
	11	Fri Sep 24	2-D Motion #3: Relative Velocity	Ch 11	111: 1,2,3
5	12	Mon Sep 27	Projectile Motion in 1 Dimension	Ch 12	106A: 1, 2, 3
		Tue Sep 28	(Problems) Lab #5: Accel. due to Gravity		
	13	Wed Sep 29	Projectile Motion in 2 Dimensions	Ch 13	110: 1,2,3
	14	Fri Oct 01	Newton's Laws #1: Intro, Using Free Body Diagrams	Ch 14	112A: 1,2,3
6	15	Mon Oct 04	Newton's Laws #2: FBDs, Kinds of Forces	Ch 15	112: 1,2,3; 113: 3
		Tue Oct 05	(Problems) Lab #6: Projectile Motion		
		Wed Oct 06	TEST 2: Lec+ 6-14, Labs 3-6		
	16	Fri Oct 08	Newton's Laws #3: Application	Ch 16	114: 1,2,3,4
7		Mon Oct 11	COLLEGE HOLIDAY--NO CLASSES		
		Tue Oct 12	COLLEGE HOLIDAY--NO CLASSES		
	17	Wed Oct 13	Newton's Universal Law of Gravity, Grav. PE	Ch 17	115: 1,2,3
	18	Fri Oct 15	Circular Motion	Ch 18	116: 1,2,3
8	19	Mon Oct 18	Rotational Motion	Ch 19	117: 1,2; 317:1
		Tue Oct 19	(Unit Vectors) Lab #7: Newton's 2nd Law		
	20	Wed Oct 20	Torque & Rotational Motion (τ, I)	Ch 20	118: 1,2
	21	Fri Oct 22	Vectors: The Cross Product & Torque	Ch 21	318: 1,2,3
9	22	Mon Oct 25	Center of Mass, Moment of Inertia	Ch 22	321: 1,5,6
		Tue Oct 26	(Integration) Lab #8: Rotational Motion of Bar		
	23	Wed Oct 27	Statics	Ch 23	120:1; 121:1,3
	24	Fri Oct 29	Work and Energy	Ch 24	122: 1; 123:1,2; 323: 1
10	25	Mon Nov 01	(10-10:35) Energy and Power	Ch 25	124: 1,2; 324: 1,2,3
		Tue Nov 02	(Problems) Lab #9 Statics		
		Wed Nov 03	TEST 3: Lec+ 14-25, Labs 7-9		
	26	Fri Nov 05	Impulse and Momentum	Ch 26	125: 1,2,3
11	27	Mon Nov 08	Oscillations: Mass on a Spring	Ch 27	126: 1,2,3; 326: 1
		Tue Nov 09	(Problems) Lab #10: Work Energy & Friction		
	28	Wed Nov 10	Oscillations: Simple Pendulum	Ch 28	127: 1,2,3
	29	Fri Nov 12	Waves: Characteristics, Types, Energy	Ch 29	128: 1,2,3
12	30	Mon Nov 15	Wave Function, Interference, Standing Waves	Ch 30	129: 1,2,3; 329:1
		Tue Nov 16	(Problems) Lab #11: Simple Harmonic Motion		
	31	Wed Nov 17	Strings and Air Columns	Ch 31	131: 1,2,3
	32	Fri Nov 19	Interference, Beats, Doppler Effect	Ch 32	132: 1,2,3

13	33	Mon Nov 22	Fluids (Pressure, Density, Archimedes)	Ch 33	133: 1,2,3
		Tue Nov 23	(Problems) Lab #12: Standing Waves		
	34	Wed Nov 24	Pascal's Principle, Continuity Eq., Bernoulli	Ch 34	134: 1,2,3
		Fri Nov 26	THANKSGIVING RECESS		
14	35	Mon Nov 29	Heat, Temp, Internal En, Specific ht, Latent Ht	Ch 35	135: 1,2,3
		Tue Nov 30	(Problems) Lab #13: Archimedes Principle		
		Wed Dec 01	TEST 4: Lecs+26-34, Labs 10-12		
	36	Fri Dec 03	Heat: Phase Changes	Ch 36	136: 1,2,3
	37	Mon Dec 06	The First Law of Thermodynamics	Ch 37	137: 1, 2
		Tue Dec 07	(Problems) Lab #14: Specific Heat		
	38	Wed Dec 08	(10-10:35) More on the First Law of Thermo.		

Final Exam: Monday, December 13, 2004 at 9:00 am in Goulet 3100

PS29 Classical Physics I Grading Information Fall 2004

Item	Percentage the Item Counts Toward the Total Grade
Paper Quiz Grade	10
Participation Grade	6
Average Laboratory Grade	13
Test #1 Grade	6
Test #2 Grade	13
Test #3 Grade	13
Test #4 Grade	13
Final Exam Grade	26

This yields your preliminary numerical course grade on a scale of 0-100. If hindsight should show that standards (level of difficulty of tests, etc.) set during the semester were too high, scaling of tests and/or the numerical course grade will occur after all data is in. No downward scaling will occur. Raw scores can be used to keep a running tally of your minimum (and most probable) preliminary numerical course grade.

The Participation Factor

The Dean will be requested to assign the grade of F (Insufficient Attendance to Warrant a Passing Grade) to any student who misses more than 13 class sessions (including lectures and tests) or more than 4 laboratory exercises.

To obtain the numerical course grade, the preliminary numerical course grade will be multiplied by the participation factor, a number between 0 and 1 determined as follows:

Item Contributing to the Participation Factor	Value
Starting Value (Everybody gets this.)	90
100% on Math Test by 10 pm Fri. Oct. 1, 2004 (All or Nothing)	10
Attendance /Participation (Each classroom session missed after 5 misses)	-1
100% on Each On-Line Quiz (Each score below 100% after 5 scores below 100%)	-1
Homework (Each score of 0 on each problem after 17 zeros)	$-\frac{1}{3}$

The number by which the preliminary numerical course grade is multiplied to obtain the numerical grade is just the total number of "participation factor" points received, divided by 100. (Every student is expected to earn a "1" for this multiplicative grade.) The attendance of a lecture or test is generally sufficient to earn credit for attendance/participation of that class but excessive (being 20 minutes or more late is considered the same as being absent) or chronic lateness, sleeping in class, not responding to direct questions in class or other obvious of lack of participation will yield a "miss" for attendance/participation.

The numerical grade is related to the letter grade as indicated at right.

A numerical grade whose value is exactly the boundary value between two letter grades results in the higher letter grade, e.g. a numerical grade of 90.000 results in a letter grade of A- rather than B+.

93.33-100	A
90-93.33	A-
86.67-90	B+
83.33-86.67	B
80-83.33	B-
75-80	C+
70-75	C
65-70	C-
61.67-65	D+
58.33-61.67	D
55-58.33	D-
0-55	E

Attendance: Class attendance at Saint Anselm College is mandatory. As such it is expected that a student will never miss a class except in the case of extraordinary circumstances beyond that student's control, such as: illness, a death in the family, or dangerous travel conditions. Extraordinary circumstances do occur. As such, each student is allowed up to five "sick days" to be used only under such extraordinary circumstances. No explanations or excuses are required except in the case of days on which tests are given. Beyond the five sick days, absences, even justifiable absences, affect the student's participation factor.

In the case of a missed test, the student must contact the professor in person or by phone prior to the test and provide documentation either before or soon after the test. In such cases, tests missed for justifiable reasons will be handled on a case by case basis. A test missed for a non-justifiable reason, such as oversleeping, will result in a zero for that test. Should a student fail to notify the professor prior to a missed test, that she or he will miss the test, that student will be assigned the grade of zero for that test. In such cases, where the professor is notified by the office of the Dean that, not only was the student's absence justifiable, but that the lack of timely notification of the professor was also justifiable, the missed test will be handled on a case by case basis.

Homework: Each problem listed in the Assigned Problems column of the syllabus is to be handed in at the start of the next lecture. Homework that is more than five minutes late will not be accepted and will earn a grade of zero (except that I reserve the right to accept homework up until the end of the lecture period in the case of a student who did the homework prior to lecture, brought the homework to lecture, but forgot to turn it in at the start of the lecture). Each homework problem is graded on a 0 or 1 basis. The homework grade is part of the participation factor. Each student is supposed to do the homework, then check her or his own solutions against solutions provided by the instructor, and finally, correct any errors in form or substance prior to submission. Because homework can often be submitted when the student is absent; a classmate can bring it in, it can be faxed or emailed, but NOT mailed (homework submitted via mail, including campus mail, will earn a grade of zero); and, because solutions are provided by the instructor prior to the due date, this policy of throwing out the first 17 zeros is in place mainly for leniency in the case of a student who does the homework but forgets to bring it to class.

On-Line Quizzes: Associated with each lecture, except the last lecture, there is an on-line quiz which the instructor is supposed to make available for a time interval beginning prior to that lecture and ending at the start of the next lecture. Students are expected to retake each quiz as necessary to obtain a hundred. The on-line quiz grade is part of the participation factor. Up to 5 scores below 100% are allowed before the participation factor is affected. The deadline for taking the quiz will be extended whenever a quiz is not available when it is supposed to be available.

Paper Quizzes: Quizzes (besides the on-line quizzes and besides any quizzes that might be given in the laboratory) will be administered, in class and/or on a take-home basis, as part of the lecture portion of the course, during the semester. Students should expect a quiz on the reading assignment for each lecture at the start of the corresponding lecture. Such quizzes may be canceled without advance notice. In tabulating the average quiz grade, the worst four grades will be thrown out. This policy of throwing out the worst four grades is in place mainly to ameliorate the impact of a justifiable absence on a day when an in-class quiz is given. A student who is absent, or comes to class too late to take the quiz, receives a grade of zero for that quiz even if the absence or lateness is justifiable.

Participation Grade: The participation grade (not to be confused with the participation factor) is the professor's assessment of the degree and quality of your participation in the course. It addresses questions such as: Do you read the chapter before class? How well do you answer questions arising in class discussion? To what degree do you solve homework problems on your own prior to consulting the solutions?

E-mail: Each student is expected to ensure that the email address in her or his Blackboard account is correct, to take whatever steps are necessary to keep her or his email account working properly, and to check her or his email frequently. Failure to do so may have an indirect impact on a student's grade.

Lab Policies

All physics laboratory sessions will take place in the physics laboratory suite: Goulet 3204/3205.

Materials and Equipment

Each student is required to bring some paper, a pencil, a pen, and a calculator to every laboratory session.

Attendance

Attendance of every laboratory session at the at the time specified is mandatory. Two laboratory "sick days" are granted each student. That is, each student may miss, for legitimate reasons, up to two laboratory sessions without penalty. No explanation is required or expected. Students who use only one sick day will have their worst laboratory exercise grade "thrown out". Students who use neither sick day will have their worst two laboratory exercise grades "thrown out". Each absence from a laboratory session in excess of two absences will result in a grade of zero for the work scheduled for that laboratory session. In the case of a student who is absent from a total of more than four laboratory sessions (equivalently: in the case of a student who attends fewer than 8 laboratory sessions), the professor of the course will request the Office of the Dean to assign that student the grade of "F" for the course, indicating insufficient attendance to warrant a passing grade. (Depending on the date of the fifth laboratory absence, such a student may have the option of withdrawing from the course.)

Laboratory Make-up Sessions

There will be no laboratory make-up sessions for credit. If a student misses a laboratory session, however, that student will still be responsible for the material covered in the lab during that session, on quizzes and tests. Where feasible, the equipment will be made available to assist a student who misses a laboratory session in preparing for quizzes and tests. The student is expected to familiarize herself or himself with the laboratory activities that she or he was supposed to engage in, but, missed out on for any reason, by meeting with another student who did carry out the laboratory exercise, and, by making an appointment with the laboratory supervisor to obtain access to the relevant laboratory equipment.

Lateness

In the event that a quiz is given at the start of a laboratory sessions, students arriving too late to take the quiz will be assigned a grade of for the quiz. Whether or not there is a quiz, students arriving more than 15 minutes late will have their laboratory session grade reduced by the number of points indicated in the following table:

15-20 minutes late	25 points
20-25 minutes late	50 points
25-30 minutes late	75 points

Students arriving more than 30 minutes late will be asked to leave and the occurrence will be treated as an absence.

Laboratory Quizzes

Students are required to read/study the handout for a given laboratory exercise, prior to the laboratory session during which that exercise is to be carried out, and should expect a quiz on the handout at the start of the session. Such quizzes may be canceled without advance notice. Laboratory quizzes on other topics will be announced in advance.

Reports

Each laboratory report is due at the end of the laboratory session during which the exercise, for which the report is written, is carried out (unless otherwise announced by the laboratory instructor). A laboratory report that is turned in late will not be graded. It will be marked "Late" and the student will be assigned a grade of zero for the laboratory report.

Laboratory Session Grade

When no quiz is given during a laboratory session, the laboratory session grade is based on the laboratory report. When a quiz is given during a laboratory session, the laboratory session grade is a weighted combination of the grade on the quiz and the grade on the laboratory report. The weighting factors are established on a case by case basis.