Course Syllabus

Course Information

Course Number/Section	Physics 2125
Course Title	Physics Laboratory I
Term	Fall 07
Days & Times	as shown in the table below

PHYS	1101	101	COLLEGE PHYSICS LAB I	Rasmussen B	S	10:00 a.m.	12:45 p.m.	FN2.214
PHYS	1101	601	COLLEGE PHYSICS LAB I	Rasmussen B	T	7:00 p.m.	9:45 p.m.	FN2.214
PHYS	1101	602	COLLEGE PHYSICS LAB I	Rasmussen B	R	7:00 p.m.	9:45 p.m.	FN2.214
PHYS	2125	101	PHYSICS LABORATORY I	Rasmussen B	T	2:30 p.m.	5:15 p.m.	FN2.214
PHYS	2125	102	PHYSICS LABORATORY I	Rasmussen B	R	2:30 p.m.	5:15 p.m.	FN2.214
PHYS	2125	103	PHYSICS LABORATORY I	Rasmussen B	M	2:30 p.m.	5:15 p.m.	FN2.214
PHYS	2125	601	PHYSICS LABORATORY I	Rasmussen B	M	7:00 p.m.	9:45 p.m.	FN2.214
PHYS	2125	602	PHYSICS LABORATORY I	Rasmussen B	W	7:00 p.m.	9:45 p.m.	FN2.214

Professor Contact Information

Professor	Mrs. B. Rasmussen
Office Phone	(972) 883-2842
Email Address	bearas@utdallas.edu
Office Location	FO2.708A
Office Hours	TR 2-4 pm and by appointment

There will be several TAs assigned for this course which will announce office hours in lab.

Course Description

An introductory lab on the basic fundamentals of physics. Students will learn about the following topics: personal computer-based data presentation and curve fitting, basic measurement concepts, experimental uncertainty, mean, standard deviation, standard error, and error propagation.

Student Learning Objectives/Outcomes

Upon completing this course, students will:

1. Be able to prepare lab reports including data, calculations, and analysis.
2. Be able to present data graphically and analyze it.
3. Be able to classify all types of error, how to determine them and how they affect results.
4. Demonstrate understanding of linear motion (displacement, velocity, acceleration), forces, and conservation of energy and momentum

Required Textbooks and Materials

Lab manual

Assignments & Academic Calendar

Lab	Date	Lab Description	Page
1	8/20 – 8/25	Experimental Techniques	6
2	8/27 – 9/1	Vectors – Force Table	11
3	9/4 – 9/10	Motion in 1D – Freely Falling Object	17
4	9/11 – 9/17	Motion in 2D – Inclined Plane	21
5	9/18 – 9/24	Forces – Newton's 2nd Law	25

6	9/25 – 10/1	Friction	29
7	10/2 – 10/8	Conservation of Mechanical Energy & Momentum	33
8	10/9 – 10/15	Momentum – Ballistic Pendulum	39
9	10/16 – 10/22	Rotation Motion – Angular Acceleration	43
10	10/23 – 10/29	Fluids – Density and Buoyant Force	47
11	10/30 – 11/5	Simple Harmonic Motion – Springs	51
12	11/6 – 11/12	Heat – Mechanical Equivalent of Heat**	55
	11/13 – 11/19	Make up lab (if necessary) Pendulums	63

**** This lab may not be skipped. You must do all labs. If you miss one lab do the makeup lab if you can't make it up in another class.**

Grading Policy

Final grades are determined from a combination of the below items. **There will be no curving.**

Lab reports	90%	90-100	A (A+, A, A-)
Participation	10%	80-89.9	B
		70-79.9	C
		60-69.9	D
		Below 60	F

Course Policies

1. All students are required to attend the laboratory session in which they have registered Any student who attends a different laboratory session will get an F in his registered course. No exceptions.
2. If for any reason the student can not make it to his lab, the student must do 3 things to get permission to make up the lab in another section:
    a. Contact Mrs. Rasmussen at bearas@utdallas.edu and bring written proof of a conflict or illness.
    b. Contact your normal lab TA about the problem.
    c. Contact the lab TA that is in the lab you can attend.
3. Active participation in all labs are required. Each student is required to take at least one independent set of data in each experiment.
4. Each student must turn in his or her own lab report. **No late reports will be accepted**. (For the exception of missing a lab, as detailed in 2, should be handled like this. The lab report must be turned into your sections lab TA as soon as possible and must include the initials of the lab TA of the session attended.)
5. Labs must be read before the lab session.
6. Labs will consist of a brief summary of the principles behind the lab, an explanation of how the lab is done, and the lab itself. Then the write up must be finished and turned into the lab TA by the beginning of the next lab.
7. Grades will be based on participation and the write-up. **Help your group!**

Lab Reports

A lab report will be required for every experiment. Each report must be typed. All graphs and charts must be presented on proper graph paper, or generated using a computer. Reports will also be graded for good grammar and writing practices.

A lab report will be worth a total of 20 points and should contain:

1. **Abstract** (less than ½ page) **1 pt** - brief discussion of the main results of your experiment (including what was the expected result).

2. **Theory** (1/2 to 1 page) **3 pts** - description of the basic physical concepts demonstrated in the experiment. It should include all relevant equations.
3. **Procedure** (1/2 to 1 page) **1 pts** - methods used to conduct the experiment. Special attention should be paid to critical parts of the experiment. List the key equipment along with a explanation of its purpose. Include a diagram of your experimental setup.
4. **Data and Graphs 3 pts** - All data must be provided in tabular form. Title each table and graph. Each graph must have properly labeled axis along with the appropriate units.
5. Calculations (appropriate size) **3pt** – Show the first calculation for all calculations (equations) in the lab.
6. **Results and Conclusions** (1/2 to 1 page) **5 pts** – summarize the results of your experiment and analyze your data. Compare the results of your experiment with those predicted by theory. Justify any differences. Investigate possible errors and uncertainties in your experiment, which might have affected the accuracy of your results. **Turn in your original data sheet signed by the instructor along with the lab report.**
7. Questions 4 pts – Answer all questions in the lab manual.

Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Email Use

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university

personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the deal will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

Disability Services

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:

The University of Texas at Dallas, SU 22
PO Box 830688
Richardson, Texas 75083-0688
(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

Off-Campus Instruction and Course Activities

Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address given below. Additional information is available from the office of the school dean. (http://www.utdallas.edu/Business Affairs/Travel_Risk_Activities.htm)

These descriptions and timelines are subject to change at the discretion of the Professor.

Important Dates:

Last day to add 8/23
Last day to drop w/o W 8/31
Last day to drop w/ WP or WF 10/11
Holiday Labor Day 9/3
Thanksgiving 11/22 – 11/24