

# Course Syllabus

Course	Infor	mation
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Course Number/Section Course Title Term Location & Times PHYS 2125 Physics Laboratory I Fall 2017 See Next Page (1<sup>st</sup> Lab week: Tue 9/5—Mon 9/11)

#### **Instructor Contact Information**

NameKuei SunOffice PhoneExtension 2842Email Addresskuei.sun@utdallas.edu (I respond to UTD emails only)Office LocationSLC 3.310 (office hours by appointment)

### **Course Description**

This is a laboratory course to accompany any Physics I or Mechanics course. Experiments investigate basic measurements and statistics including error, mean, standard deviation, and error propagation; one dimensional and two dimensional motion; forces and Newton's laws; energy/momentum conservation; friction; rotational motion; and oscillations. (Corequisite: PHYS 1301 or PHYS 2325 or PHYS 2421)

### **Student Learning Objectives/Outcomes**

Upon completing this course, students will be able to

- 1. Apply the basic concepts and techniques of experimental mechanics to other areas of science.
- 2. Prepare basic lab reports including data, calculations, graphs, and analyses.
- 3. Analyze errors correctly and understand how they affect results.
- 4. Demonstrate understanding of linear, rotational, and oscillatory motion, forces, friction, and energy/momentum conservation.

**Please note**: Labs and lectures have different focuses. They usually follow the same order of content to complement each other but are not designed to "cover" each other. Students are expected to learn some physics only from the lab or before they learn from the lecture.

### **Required Materials**

Students do not need to buy any textbook but will

- 1. Print out Lab Safety Handout on eLearning, sign, and bring to first lab.
- 2. Print out (i) Lab Manuals, (ii) Pre-labs, and (iii) Report Sheets on eLearning and bring to lab.
- 3. Study Lab Manuals and answer questions on Pre-labs before your section. <u>Pre-labs are due at the</u> very beginning of lab and are part of grades.
- 4. Finish Report Sheets by recording/analyzing data, completing Check Boxes, and answering questions. **Report Sheets are due by the end of lab and are part of grades**.
- 5. Regularly check additional materials and important announcements on eLearning.

### **Procedure for Students**



Lab	Date (Tue-Mon)	Торіс	Assignments Due	
1	9/5-9/11	Measurement & error	Report (no Pre-lab)	
2	9/12–9/18	Graphing & regression analysis	Pre-lab & Report	
3	9/19–9/25	Vector analysis of forces	Pre-lab & Report	
4	9/26–10/2	Projectile motion	Pre-lab & Report	
5	10/3-10/9	Newton's 2nd Law	Pre-lab & Report	
6	10/10–10/16	Energy/momentum conservation	Pre-lab & Report	
7	10/17–10/23 Friction & pure rolling		Pre-lab & Report	
8	10/24–10/30	Rotational motion	Pre-lab & Report	
9	10/31–11/6	Simple harmonic oscillators	Pre-lab & Report	
10	11/7–11/13	String waves & resonance	Pre-lab & Report	
• If you miss a lab, try to make it up in the same lab week to avoid penalty (see Course Policy 7).				

## Schedule (A lab week starts on a Tuesday and ends on the following Monday)

• You can also make up ONE lab in 11/27(Mon)–12/1(Fri) with 20% penalty (see Course Policy 8).

# **Section Information**

Sec	Time	Place	ТА	Office hour	
118	<b>Tue 1p</b> -3:45	FN2.212	Junpeng Hou <jxh161730></jxh161730>	Fri 9-10a @ PHA1.115	
			Yichao Zhang <yxz154930></yxz154930>	Fri 9-10a @ PHA1.107	
104	<b>Tue 1p</b> -3:45	FN2.214	Fatemeh Khashami <fxk160330></fxk160330>	Thu 12-1p @ PHY1.104 #18	
114	<b>Tue 4p</b> -6:45	FN2.212	Qing Wang <qxw151230></qxw151230>	Fri 1-2p @ PHY1.602	
105	<b>Tue 4p</b> -6:45	FN2.214	Pengpeng Zheng <pxz150930></pxz150930>	Tue 12-1p @ PHY1.102 #14	
602	<b>Tue 7p</b> -9:45	FN2.214	Koustubh Bhattacharjee <kxb173230></kxb173230>	Tue 10-11a @ PHY1.102 #10	
106	Wed 10a-12:45	FN2.212	Asiye Asaadzade <axa174031></axa174031>	Mon 10-11a @ PHY1.102 #2	
119	Wed 10a-12:45	FN2.214	Ashan Wettasinghe <apw170230></apw170230>	Tue 2-3p @ PHY1.104 #6	
115	Wed 1p-3:45	FN2.212	Yangzi Zheng <yxz167330></yxz167330>	Thu 9-10a @ PHY1.102 #18	
107	Wed 1p-3:45	FN2.214	Fatemeh Khashami <fxk160330></fxk160330>	Thu 12-1p @ PHY1.104 #18	
603	Wed 7p-9:45	FN2.214	Xun Liu <xxl135130></xxl135130>	Mon 2-3p @ PHY1.104 #7	
117	<b>Thu 10a</b> -12:45	FN2.212	Asiye Asaadzade <axa174031></axa174031>	Mon 10-11a @ PHY1.102 #2	
108	<b>Thu 10a</b> -12:45	FN2.214	Koustubh Bhattacharjee <kxb173230></kxb173230>	Tue 10-11a @ PHY1.102 #10	
109	<b>Thu 1p</b> -3:45	FN2.214	Xiaotao Xu <xxx160530></xxx160530>	Wed 10-11a @ PHY1.104 #17	
110	<b>Thu 4p</b> -6:45	FN2.212	Qing Wang <qxw151230></qxw151230>	Fri 1-2p @ PHY1.602	
111	Fri 10a-12:45	FN2.212	Ashan Wettasinghe	Tue 2-3p @ PHY1.104 #6	
116	16 Fri 10a-12:45 FN2.214		Junpeng Hou <jxh161730></jxh161730>	Fri 9-10a @ PHA1.115	
			Yichao Zhang <yxz154930></yxz154930>	Fri 9-10a @ PHA1.107	
112	Fri 1p-3:45	FN2.214	Xiaotao Xu <xxx160530></xxx160530>	Wed 10-11a @ PHY1.104 #17	
113	<b>Fri 4p</b> -6:45	FN2.212	Yangzi Zheng <yxz167330></yxz167330>	Thu 9-10a @ PHY1.102 #18	
101	Mon 10a-12:45	FN2.214	Pengpeng Zheng <pxz150930></pxz150930>	Tue 12-1p @ PHY1.102 #14	
102	<b>Mon 1p</b> -3:45	FN2.214	Dimithree Kahanda <dxk123030></dxk123030>	ahanda <dxk123030> Tue 10:30-11:30 @ NSERL Lobby</dxk123030>	
103	<b>Mon 4p</b> -6:45	FN2.214	Dimithree Kahanda <dxk123030></dxk123030>	Tue 10:30-11:30 @ NSERL Lobby	
601	<b>Mon 7p</b> -9:45	FN2.214	Xun Liu <xxl135130></xxl135130>	Mon 2-3p @ PHY1.104 #7	

# **Grading Rule**

Lab	Score	Pre-lab	Report (data, analyses, & check boxes		
1	100	No Pre-lab	100%		
2-10	100	30%	70%		
Final score x is average of the 10 lab scores. There is neither dropped grade nor curving.					

Score	<i>x</i> ≥90	90> <i>x</i> ≥85	85> <i>x</i> ≥80	80> <i>x</i> ≥75	75> <i>x</i> ≥70	70> <i>x</i> ≥66
Grade	A+ or A (*)	A-	B+	В	B-	C+
Score	66> <i>x</i> ≥63	63> <i>x</i> ≥60	60> <i>x</i> ≥56	56> <i>x</i> ≥53	53> <i>x</i> ≥50	50> <i>x</i>
Grade	С	C-	D+	D	D-	F
(*)Among those with $x \ge 90$ , the top 25% get an A+, and the others get an A.						

## Tips to Get an A

- > <u>Attend all labs</u>. Never miss any lab/assignment/deadline.
- ➤ <u>Acquire enough time</u> (≥3 hrs) doing Pre-lab and studying Lab Manual before your section. Think through the physics related to the experiment. Familiarize yourself with skills that will be used to analyze data. You can attend any TA's office hour for the Pre-lab questions.
- Answer relevantly and logically. Do not just answer Y/N to WH questions. Your experimental data might not always confirm the theory, but your discussions must be logical and consistent.
- Avoid technical issues losing points: read Course Policies below carefully; pay attention to every announcement on eLearning; listen to your TAs; make sure that your Pre-lab and Report Sheets are complete and have your name/ID readable on it; check your grades recorded correctly on eLearning. It will be very disappointing to lose points for any reason irrelevant to physics.
- Ask in advance. Contact your TAs or instructor about any problem you have or accommodation you need in advance. For absence due to an emergency, inform them within one week after the event. Any late request for retroactive services will be denied.

### **Course Policies**

- 1. You are required to attend the lab session in which you have registered. If you attend a different section, you will get an **F** in your registered section. No exceptions.
- Your grade is based on two assignments: Pre-lab and Report Sheets (see Grading Rule above). When working on the assignments, you may discuss the physics with TAs (e.g., by attending any TA's office hour) or other students, but you have to do calculations and answer questions individually and independently. Pre-labs are due at the very beginning of lab; Report Sheets are due at the end of lab. Late assignments will NOT be accepted.
- 3. The investigation of **academic dishonesty** will take place for (1) copying of lab assignments from other students or from previous assignments, (2) helping other students copy the assignments, including spreading the answers/solutions through the internet, etc. (see other examples). Possible sanctions include, but are not limited to, receiving zero grade for associated assignments or reduction in the final course grade.
- 4. During the lab, you will work as a group of 3 (or 2 if necessary), following the instructions on Lab Manual to do experiments and record data on Report Sheets. Each student will take at least 1 independent set of data in each experiment, and a team should have the same data. Active participation and good collaboration are required. You will analyze and discuss the results (individually and independently) on Report Sheets and submit it to TA right after finishing and cleaning up the lab. The TA will inspect your work area before accepting your Report Sheets.
- 5. There are **Check Points** during the lab (as instructed in Lab Manual). You will ask the TAs to check your setup, operation, data, graphs, etc., and have their initials on **Check Boxes on Report Sheets**, which are important part of your grades.
- 6. Your TAs will grade the assignments and return them at the next meeting. From the time you are supposed to receive a lab grade, you have ONE WEEK to query the TA about it. After that, this lab grade is unchangeable. Please keep all the returned documents of this semester. <u>It is your responsibility to make sure the grades being accurate and recorded</u>.

- 7. *Same-lab-week makeups*. If for any reason you cannot make it to your lab, you have to do **TWO** things in advance to get permission to make up the lab in another section of the **same lab week**:
  - 1) Contact your regular lab TA about the problem and get the TA's reply with permission.
  - 2) Contact the TA of make-up lab you will attend and get the TA's reply with permission.
- **Note:** There is no penalty for your **first two** same-lab-week makeups. Starting from the third makeup, your grade will be **(Prelab + Report)** × **80%**.
- Last-week makeups (with 20% penalty). You have a chance to make up one and ONLY one lab in the last week mentioned in Schedule. You need to sign up for it. The signup instruction will be announced in the week of Lab 8. Your last-week makeup grade will be (Prelab + Report)×80%.
- **Note:** If you have **documented absence**, you could request a penalty-free or more than one make-up lab, given that you have informed the instructor in advance or **within one week** after your absence and have provided documentation. The request will be considered on a case-by-case basis.
- 9. In the event of public emergency, inclement weather, etc., that leads to unexpected closure of the university, Lab will not meet. Please follow the university announcement for its closure and reopening. After the event, look for Announcement on eLearning about the lab reschedule.
- 10. It is the policy and practice of UTD to make reasonable accommodations for students with properly documented disabilities. However, written notification from the Office of Student AccessAbility (OSA) is required. If you are eligible to receive an accommodation and would like to request it for this course, please discuss it with the instructor and allow **one week** advance notice.

#### **Comet Creed**

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

### **University Policies and Procedures**

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

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