

SYLLABUS

PHYS-1403 LABS

SPRING 2014

**THE UNIVERSITY OF TEXAS AT EL PASO
DEPARTMENT OF PHYSICS**

Location: Physical Sciences Building (PSCI), Room 316

Enrollment: [Prerequisite: MATH 1508 (Pre-calculus I) or 1320 (Mathematics for Social Sciences I) and concurrent enrollment in a lecture section of PHYS 1403]. Each lab meets once a week for 1 hour and 50 minutes according to the schedule below. This lab is an integral part of the PHYS-1403 course. To get credit for this course you must be enrolled in one and only laboratory section in addition to one and only one lecture section.

Laboratory Coordinator:

Name: Dr. Felicia Manciu

Room No. : 215-C (PSCI)

E-mail: fsmanciu@utep.edu

Phone No. : (915)-747-8472

Name: Master Karla Carmona

Room No. : 312-C (PSCI)

E-mail: kcarmona@miners.utep.edu

Phone No. : (915)-747-7549

Laboratory Manual: PHYSICS-1403 General Physics 1 Laboratory Exercises by Dr. William G. Durrer, published by Pearson Custom Publishing. Every student in the laboratory **must purchase a lab manual for this lab from the campus university bookstore.** You are required to read each lab before you come to the lab session.

Things to bring to the lab: Each student will have with them a scientific calculator, a 6-inch cm ruler, pens, pencils, notebooks and any paper for recording data and laboratory information.

TENTATIVE SCHEDULE OF LAB EXPERIMENTS:

Lab # 1 : Average values and instantaneous values.

Lab # 2 : Falling bodies near the Earth's surface.

Lab # 3 : Range of a projectile – 2D kinematics.

Lab # 4 : Newton's 1st and 2nd laws of motion.

Lab # 5 : Newton's 3rd law of motion.

Lab # 6 : Atwood's Machine.

Lab # 7 : Work and conservation of energy.

Lab # 8 : Conservation of linear momentum.

Lab # 9 : Conservation of energy in collisions.

Lab # 10 : Rot. Inertia and Cons. of ang. mom.

Lab # 11 : Simple harmonic motion.

GUIDELINES FOR SUCCESS IN THIS LAB:

Attendance & participation: Attendance and participation is very important for the laboratory work. Every student must attend and be an active participant in each and every laboratory session. Each student is expected to individually take anywhere from one to five experimental data sets. As soon as your individual data sets are taken, you should start to perform you lab computations using your own data and to answer the questions asked in the laboratory manual. It is **highly recommended** that you show your results to the lab instructor before you leave the lab. **Pre-tests** and **post-tests** may also be included as your participation for some labs.

Lab reports/Homeworks: Students will write up a one or two-page **lab report (or do the homework)** at home for each lab. The required guidelines for writing the report will be addressed by the laboratory instructor at the first session of the class and by a separate handout. Students will submit their **lab report/ homework** along with the respective **lab work** on the succeeding lab session and will be handed back the graded one a week later. Neat tabulation of data, proper formatting of the laboratory reports, neat presentation of reports on computer word processors are all highly encouraged.

Lab work: Students will perform the experiments in a group. They will record experimental data and answer the write-up questions. Students must use their own words to answer these questions since these pages are going to be graded as **lab work**. **Note that all the write-up questions must be completed in the lab not at home.**

Grading Policy: [Lab report/Homework-30%, Lab work-60% and Attendance & Participation -10%] Each lab report/homework will be graded on a scale from 0 to 30 and each **lab work** will be graded on a scale from 0 to 60, with points taken off for errors detected in the labs. Late lab report/homework and lab work together will be fined 5 points for every day of late submission. A lab report/homework and lab work late by over a week will receive a grade of zero for that specific lab. **Please note that the lab report/Homework and lab work for a missed lab will not be accepted for grading. The lowest lab score will be dropped at the end of the semester.** Since you will be able to drop the lowest lab score, **there will be no makeup labs.** On the other hand, you should be on time as your attendance and you should actively involve in the lab work as your participation. You can attend the missed lab with another lab instructor of the corresponding lab. So, please carefully look at the schedule table given above. Your lab instructor will grade your **attendance and participation** on the scale of 0 to 10.

Individual and teamwork skills: This lab can help you to sharpen your teamwork skills. Group discussions during the laboratory are highly encouraged. However, each member of the group is required to do his/her own measures, perform his/her own calculations, and write an individual laboratory report. Independent thinking and independent work are also important skills to develop, so you are expected/required to be active in all the laboratory sessions and to prepare your own lab reports.

Advice: You are cordially encouraged to ask questions while performing the labs. We hope to create an atmosphere that is conducive to learning and where no question is a “stupid” question. Often several students will have the same or a similar question, so feel free to listen to the instructor if he/she is answering someone else’s question. You may find that you can save time this way instead of waiting for the instructor to become available on a busy day. Also, you may find that it has been necessary to schedule some experiments before the relevant material has been covered in lecture. The instructors will make an effort in their introductory remarks to compensate for such mismatches, but in these cases you will find that it is especially important to read and understand the experiment before you come to the lab. You will also probably find your course textbook to be a valuable aid under such circumstances, and you are encouraged to use it to help you to understand material presented in the lab.

LABORATORY POLICIES

[1] All cell phones, beepers, alarms and other electronic gadgets must be in their OFF mode.

[2] Positively **NO drinking or eating of any kind of foods is allowed for ANYBODY** in the laboratory.

[3] If you feel that an experiment has been graded unfairly, you may first consult with your lab instructor. If you are still unsatisfied, you may bring the matter to the attention of the coordinator. We are aware that we can make mistakes, and we may agree that your score was too low, or we may find that we missed a mistake that you made and gave you a score that was too high.

[4] **COMPUTER POLICY** : The PASCO software that we use in this laboratory can be very sensitive to the way in which WINDOWS is set up. Because of this please **DO NOT** make any changes to any of the WINDOW SETTINGS, no matter how inconsequential that change may appear to be. Please use the WINDOW settings in their current configuration only. Please **DO NOT** load any new software on to the computers in the labs. Please also **DO NOT** delete any files from the laboratory computers.

[5] **LAB STATION POLICY** : You and your lab group are responsible to leave the equipments at your work station in the same condition in which you found them. This means you will disconnect all interface connections to the computer, dismantle all electrical and magnetic circuit connections and leave all instruments in their **OFF** mode. If anything has been broken or damaged during the lab period, please let the lab instructor know about it, so that it may be fixed or replaced before the next lab group arrives.

[6] All laboratory experiments as scheduled for a given section are **MANDATORY AND CANNOT BE MISSED NOR RESCHEDULED**.

[7] **You must attend the section for which you have originally registered**. You cannot attend other sections for reasons of personal convenience, as the other sections may be operating at maximum student capacity.

[8] **NO MAKEUP**: Under **NO** condition can any laboratory session that is missed by a student be made up at any later time. Please **DO NOT** seek a re-clarification of the previous sentence. NO means NO. If you do have to miss a lab session for genuine academic, medical or a natural disaster reason, you must provide documentary and corroborative proof to the laboratory instructor before your absence or in the case of a natural disaster after the event. Students with genuine reasons for absence do not have to write their laboratory reports for the missed experiments and will be given a grade of EA (meaning Excused Absence) for the missed lab.

Their final laboratory grade will be computed over the labs they have actually performed. Students who have not satisfactorily explained their absence from the lab sessions will by default receive a grade of zero for those missed lab.

[9] **LATE ARRIVAL:** It is imperative that you arrive on time for the labs. It is clear that the lab involves a group effort. You will be part of a group working at one of the lab stations, and it is unfair to your group if you are so late that their progress in performing the exercise is delayed because they need to explain to you what is going on. Your instructor therefore has the authority to subtract points if you arrive after your group has begun working on the exercise for that day. **In any case, arriving 15 minutes or more late counts as an unexcused absence and you will lose the lab report for that day.**

[10] **RECEIVING AN AUTOMATIC ZERO FOR THE LAB:** If you consistently violate safety precautions in the lab to the point where in the instructor's judgment you represent a safety hazard to both yourself and your fellow students, you will be asked to leave the lab and will be given a total lab score of zero. You will receive one warning from the instructor that your behavior is a safety concern. If after this warning you continue to violate safety instructions you will then be asked to leave and not return.

[11] The Academic Integrity Policy is cited in

<http://academics.utep.edu/Default.aspx?tabid=23785>

[12] **DISABILITY STATEMENT:** If a student has or suspects a disability and needs accommodation, he/she should contact the Disabled Student Services Office (DSSO) at (915)-747-5148 or at dss@utep.edu, or go to Room 106 East Union Building. The student is responsible for presenting to the instructor any DSS accommodation letters and instructions.

[13] **MILITARY STATEMENT :** If you are a military student with the potential of being called to the military service and/or training during the course of the semester you are encouraged to contact the Laboratory Coordinator as soon as you are being called.

[14] In all other matters not discussed above, the University of Texas at El Paso's university wide policy supersedes all other laboratory's policy.

GUIDELINES FOR WRITING A LAB REPORT

FULL NAME: _____

LAB: PHYS _____ **CRN:** _____ **TIME:** _____

DATE OF EXPERIMENT: _____ **EXPERIMENT No.** _____

TITLE OF EXPERIMENT: _____

AIM: (5 points)

State here in as detail as possible the intrinsic aim of performing this experiment and what are we finally going to measure or evaluate.

APPARATUS: (5 points)

List here in great detail each and every piece of equipment that you have utilized in this experiment. Do specify the make, model and other details of the instruments, including the kind of computers and software that you have employed in each experiment.

EXPERIMENTAL SET-UP DIAGRAM: (5 points)

Show here a schematic diagram of the experimental set-up as you had it on the table, and/or show a circuit diagram (if applicable). Label each item correctly and format it neatly.

EXPERIMENTAL PROCEDURE: (10 points)

In clear and short English sentences explain how you started and the steps on sequential order that you took to do the experiment.

CONCLUSION AND DISCUSSION: (5 points)

Explain what conclusions you have drawn from this experiment. DO NOT rewrite the results here.

TOTAL: 30 POINTS