

Fall 2014 Physics 1030L Syllabus
General Physics Laboratory: Mechanics and Heat
LABORATORY SCHEDULE
AUGUST 18th - DECEMBER 8th

Sections	General Physics Laboratory: Mechanics and Heat – CRN 44666 – PHYS 1030L Section 006 Tuesday 1:00PM – 2:50 PM	
Schedule	Tuesday 1:00-2:50 PM Grote Hall Room 216	
Documents for Lab	Web Page : http://www.utc.edu/Faculty/Harold-Climer/ Alternate URL to Web Page: http://web2.utc.edu/~pbs273/ All materials for the lab are on my web page. I DO NOT USE BLACKBOARD	
Instructors	Mr. Harold A. Climer 223 Grote Hall Tel: (Physics Dept.) 425-4546 e-mail: Harold-Climer@utc.edu	Mr. Jack Pitkin Lab Preparator/Senior Instructor Office: 215 Grote Hall Tel: 425-4518 e-mail: Jack-Pitkin@utc.edu
Location	Grote 216	
Office Hours	Tuesday 8:30-9:30AM, Wednesday 8:30-9:30AM, Thursday 8:30-9:30 AM	

Catalog Description: Experiments investigate various aspects of forces and uniform motion, conservation principles, sound and thermodynamics. Co-requisite: Physics 1030 or permission of the head of the department.

This course, in combination with Physics 1030, satisfies a general education requirement in the SL (Natural Sciences) category.

Course Objectives: This laboratory is aimed to enhance the understanding and demonstration of scientific principles covered in the co-requisite lecture course. In effecting this goal, students will integrate conceptual ideas into practical quantitative activities in lab, gaining hands-on experience and practicing detailed observation and recording of data. The advantages and limitations of specific approaches will be addressed in analysis and discussion of the result uncertainties in experiments. Logical analysis of data in problem-solving and presentation of data by graphs are addressed. Finally, students will enhance their skills in effective communication of scientific results through writing lab reports.

- If you are a student with a disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) and think you might need special assistance or a special accommodation in this class or any other class, please speak with your professor as soon as possible. You may also contact the UTC Office for Students with Disabilities at 425-4006 or go by their office in 102 Frist Hall on the UTC campus.
- If you find that personal problems, career indecision, study and time management difficulties, etc. are adversely affecting your successful progress at UTC, please contact the Counseling and Career Planning Center at 425-4438.

- If you need a tutor, please call the Advisement and Student Success Center at (423) 425-4573, or visit the office in the University Center, Room 108.
- To enhance student services, the University will use your UTC email address (firstname-lastname@utc.edu) for all communications. (See <http://www.utc.edu> to log in.) Please check your UTC email on a regular basis. If you have problems with accessing your email account, contact the Help Desk at 423-425-4000.

Class information and announcements may be communicated through the announcements listings on the course web page and through your UTC e-mail address in addition to being announced in class.

Required Materials and Learning Aids:

A. Manual: A description of all experiments as well as the report covers (Pre Lab) and data pages are available for printing from the class website <http://www.utc.edu/Faculty/Harold-Climer/>. You must print the handout and 2 data sheets and bring them to class with you. Please look at the schedule to determine which experiment you will need for any given week.

B. Scientific Calculator: You must own a standalone calculator and bring one with you to lab. You should familiarize yourself with how to use it. **You lab instructor will not teach you how to use it.**

No cell phone calculator apps are allowed. Also Lap Top or Tablet calculator apps are not allowed in the lab.

I recommend an HP Calculator if you do not already have one or have not purchased one.

Attendance Policy: Attendance at all laboratory sessions is required. If you miss a session, you will get a zero for that lab. Your instructor may make exceptions and give you a makeup session if he/she is convinced that you were ill, had a death in the family, or were involved in a similar emergency. Verification documents must be provided. The make-up form is available for download from my web page. The instructor's signature is required to get a make-up session with Mr. Pitkin.

If you are late to a lab session by more than 5 minutes, you are not allowed to perform the experiment and you will get zero for this lab, unless other arrangements have been made. Students are responsible for all information that is given in class.

Composition of your final grade*: The purposes of the final grade are (1) to define and communicate the student's level of educational achievement and (2) to motivate students to greater effort.

There will be a total of 1,250 points which can be earned during the course. The best 10 of 11 assignments will compose the lab reports portion of your grade. The first lab missed will count as the dropped grade, and will not be allowed as a make-up. If all 11 assignments are completed, the lowest grade will be dropped.

Points	Percentage
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Lab Reports/Assignments (best 10 of 11)	1000	80%
Final Exam	250	20 %
Total	1250	100 %

Grading Scale*: A \geq 90.0%; B=80.0-89.9%; C=70.0-79.9%; D=60.0-69.9%; F<60.0%

UTC Handbook: “A” represents superior performance in the course. “B” represents commendable performance in the essentials of the course. “C” represents acceptable performance in the essentials of the course. “D” represents marginal performance below the acceptable standards of university work. “F” indicates unqualified failure and the necessity for repeating the course to obtain credit.

Lab Report Due Dates*: The hand-written pre-lab portion of each lab report (including goals, theory, and procedure) is due at the beginning of the session in which the experiment will be performed.

Printed copies of the last parts of all reports are due in the box outside my office for section 006, before 12 noon the Thursday following the laboratory session. This includes your data, calculations/graphs, results, conclusions, and any additional questions. **Electronic (emailed) lab reports are not accepted.**

No lab reports will be accepted after the Final Exam

DO NOT repeat procedure (description of the steps of the experiment) in the Results or Conclusions sections of the report. Points will be deducted from your score if you do.

Late pre-labs and lab reports are penalized 10% for each day beyond the due date that they are late unless extraordinary circumstances show complete inability to do work for the days between when the lab was done and the assignment was due. The latter case requires submission of the Missed Assignment make-up form. The two parts of your report (pre-lab and lab report) will be put together by your instructor and will be returned after grading. Keep up with these to study for your final exam.

Tentative schedule for Physics 1030L Lab Fall 2014 Section 006*:

Week Beginning	Experiment	Experiment Date Section 006	Report Due Date Section 006
1 8/18	NO LAB	NO LAB	NO LAB
2 8/25	NO LAB	NO LAB	NO LAB
3 9/01	Labor Day	NO LAB	NO LAB
4 9/8	Data Processing	Tu 9 September	Th 11 September in basket on office door by noon
5 9/15	Human Response Time	Tu 16 September	Th 18 September in basket on office door by noon
6 9/22	Acceleration due to Gravity	Tu 23 September	Th 25 September in basket on office door by noon
7 9/29	Projectile Motion	Tu 30 September	Th 02 October in basket on office door by noon
8 10/06	Resolution of Forces	Tu 7 October	Th 9 October in basket on office door by noon
9 10/13	Friction and the Inclined Plane	Tu 14 October	Th 16 October in basket on office door by noon
10 10/20	FALL BREAK	NO LAB	NO LAB
11 10/27	Conservation of Momentum	Tu 28 October	Th 30 October in basket on office door by noon
12 11/03	Simple Pendulum	Tu 04 November	Th 06 November in basket on office door by noon
13 11/10	Spring Constant	Tu 11 November	Th 13 November in basket on office door by noon
14 11/17	Specific Heat	Tu 18 November	Th 20 November in basket on office door by noon
15 11/24	Standing Waves	Tu 25 November	Tu 2 December in basket
16 12/01	Final Exam	Sat 6 December	1:00 to 3:00 PM

LABORATORY WORK is an essential part of the learning process at this level of physics. During the semester you will perform ten experiments, analyze their results, write and turn in lab reports.

ATTENDANCE

Attendance at all laboratory sessions is required. If you miss a session, you will get zero for this lab. Your instructor may make exceptions and give you a makeup session if he/she is convinced that you were ill, had a death in the family, or were involved in a similar emergency. Verification documents must be provided. The instructor's signature on a missed lab report form is required to get a make-up session with Mr. Pitkin.

If you are late to a lab session by more than 5 minutes, you will not be allowed to perform the experiment and you will get zero for this lab, unless other arrangements has been made beforehand.

Students are responsible for all information that is given in class if they are absent.

LAB REPORT FORMAT

Your lab report is the original documented record of all the work you have performed regarding to each lab experiment.

YOUR LAB REPORT SHOULD CONTAIN:

1. Title of experiment
 2. Date performed
 3. Your name, Partner(s) (if any), **Section Number**
`1-3 to be placed at the top of the Pre-lab Sheet in spaces provided
 4. The goals of the experiment
 5. Theoretical background
 6. Sketch of the experimental set-up
 7. Experimental procedure: **Note: Must be detailed enough so that another student could repeat the experiment later from only your Pre-Lab instructions.**
- 1-7 are hand written on the Pre-Lab sheets.

8-11 are to be typed.

8. Experimental data
9. Sample Calculations **TO BE TYPED** {See the insert menu of Microsoft Word for formulas and math symbols} – Graphs, if any.
10. Results: Obtained results, comparison with known parameters
11. Conclusions: Discussion of types of errors and sources of errors.

DO NOT repeat procedure (description of the steps of the experiment) in the Results or Conclusions sections of the report. Points will be deducted from your score if you do.

**FOR MORE DETAILED INFORMATION, SEE LABORATORY REQUIREMENTS
LABORATORY REQUIREMENTS**

HOW TO PREPARE FOR THE LABORATORY SESSION

You should study the description of the experiment and start to write your lab report **BEFORE** the lab session. The labs are on Mr. Climer's Web Page.

<http://oneweb.utc.edu/~Harold-Climer/>

<http://www.utc.edu/Faculty/Harold-Climer/>

1. Please consult the schedule for your section and choose the appropriate experiment to prepare.

2. Download and print the report cover page and fill it out. Download the Experiment Description and 2 copies of the data page (if any).

3. Read the experiment description and write down the goals of the experiment, sketch of the experimental setup, and the experimental procedure. Parts 1 through 7 of your lab report (see above) should be hand-written before the lab session and turned in before the lab session starts. It will be graded together with the rest of your lab report. It is worth 20% of your grade for each experiment.

LABORATORY SESSION

You will need for labs: paper, carbon paper, ruler, protractor, graph paper (10 mm to 1 cm) and Scientific Calculator. **Pads of large grid green Engineering Paper used by engineering students for homework problems cannot be used to make graphs.**

Please, respect the LAB RULES (posted in the lab). No food or drinks are allowed in lab.

During the laboratory session in class you should record all work you have performed. All activities, experimental data, results, etc., should be recorded as they occur, on your data pages, in ink. No erasures should be made. A single line through the "wrong material" is sufficient, with any corrections or change noted above or beside it. This will allow for the recovery of information which, later, may be proving to be valuable. Your lab results should be **RECORDED IN DUPLICATE** on the data page for each lab. The data page for each experiment can be downloaded from Mr. Climer's Web Page. You need to print 2 copies of it and use it in class. Before leaving the class, you should give a carbon copy to your instructor who will keep it until the end of the semester as a proof that you have performed this experiment. Attach the top, handwritten copy to your lab report.

The components needed for individual lab reports will be listed at the end of the description for that lab. In general, the points will be divided as follows:

Pre-lab (goals, theory, procedure)	20%
Experimental data	20%
Sample calculations/Graphs	35%
Results	10%
Conclusions	10%
Correct Format/Style	5%

Final Exam: The final exam will be comprehensive and cover all labs performed in the course and it will be a written exam. Note: As per department policy (not mine) one lab report grade will be dropped. If you miss a lab, the report for that lab will automatically be counted as your dropped lab. If you miss a lab you, will still be held responsible for all information about that lab on the Final Exam.

Cheating and Plagiarism policy: Although you may work with a lab partner during the experiment, lab reports should be written individually as it is important your assignment be completed with your thoughts alone. It is important that if you need help or assistance, you seek it out from fellow students or the instructor in order to get the most understanding of the

concept or assignment. However, if you receive help from anyone else, you must acknowledge their help by placing their name under yours on the front page of the report. If we find that two students copied their lab reports from each other, the lab reports will be returned ungraded and neither student will receive credit for the lab report. Do not directly “copy and paste” discussions or figures from the laboratory manual – the report should be in your own words and with your own interpretation.

Please read and heed the following information regarding academic dishonesty in cheating and plagiarism. The instructor cannot and will not tolerate academic dishonesty. Cheating includes, but is not limited to:

1. Supplying or using work or answers that are not your own;
2. Providing or accepting assistance with completing examinations, or
3. Faking data or results.

Plagiarism can be defined as, but is not limited to:

1. Copying a paper from a source text without proper acknowledgment,
2. Buying a paper from a research service or term paper mill,
3. Turning in another student’s work (past or present) with or without that student’s knowledge, or
4. Paraphrasing materials from a source text without appropriate documentation.

For more information, refer to the UTC Student Handbook.

*All grading scales, point values, and schedules are subject to change at the discretion of the instructor. It is the responsibility of the student to keep up with changes to these items that are announced in class or on my web page.

AGAIN I REPEAT

Lab Report Due Dates*: The hand-written pre-lab portion of each lab report (including goals, theory, and procedure) is due at the beginning of the session in which the experiment will be performed.

Printed copies of the last parts of all reports are due on the dates listed in the syllabus. This includes your data, sample calculations/graphs, results, conclusions, and any additional questions; do not write the pre-lab again.

Electronic (emailed) lab reports are not accepted.

Late pre-labs and lab reports are penalized 10% for each day that they are late unless extraordinary circumstances show complete inability to do work for the days between when the lab was done and the assignment was due. The latter case requires submission of the Missed Assignment make-up form.

LATE MEANS:

1. If the PreLabs are not turned in at the beginning of class before I start my explanation of the lab we are doing that day.
2. Reports are not turned in outside my office door before 12:00 Noon on Thursday.