

GNSC 1110L LAB SCHEDULE FALL 2014

August 18th to December 8th

NOTE!!! ALL SECTIONS MEET IN GROTE 214

Instructors:

Mr. Harold A. Climer

GNSC 1110L Section 001 CRN 40811 W 1:00PM – 2:50 PM

GNSC 1110L Section 002 CRN 40812 W 3:00PM – 4:50PM

Office: Room 223 Grote Hall

Phone: 425-4546 (Physics Office leave message)

Office Hours: Tuesday 8:30–9:30 AM , W 8:30-9:30 AM, Thursday 8:30-9:30AM

E-mail Address: Harold-Climer@utc.edu

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

Mr. Jack Pitkin

Lab Preparator/Senior Instructor

Office: Room 215 Grote Hall

Tel: 425-4518 E-mail: Jack-Pitkin@utc.edu

Catalogue Description: Laboratory to accompany General Science 1110. Studies involve error analysis, circuits, optics, nuclear radiation, heat and temperature, pH Measurements, astronomy measurements. Every semester. Two hours per week. Co requisite: GNSC 1110 or department head approval. Laboratory/studio course fee will be assessed. 1.000 Credit hours 1.000 Lab hours

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

List of Experiments

DATE	EXPERIMENT
20 August 2014	Introduction to Lab
27 August 2014	Human Response Time
3 September 2014	NO LAB
10 September 2014	Picket Fence *
17 September 2014	Projectile Motion
24 September 2014	Simple Pendulum
1 October 2014	Spring Constant
8 October 2014	Standing Waves on a String
15 October 2014	Lenses
22 October 2014	FALL BREAK
29 October 2014	Ohm's Law*
5 November 2014	Sea Floor Spreading*
12 November 2014	Parallax
19 November 2014	FINAL EXAM

Note: This is a tentative schedule and is subject to modification at the discretion of the instructor, the University, or the availability of equipment. * DENOTES COMPUTER ASSISTED LAB

REQUIRED ITEMS YOU MUST BRING TO CLASS Lab notebook, pen, mechanical pencil (HB 0.05mm lead), clear plastic cm ruler, protractor, 10 mm to the cm graph paper, and a Scientific Calculator.

Instructions

Attendance

Attendance is required. Come to the lab ON TIME. You must have the required items with you each time. A 10% penalty will be applied to your grade for the experiment if you do not have a calculator or other materials with you.

Pre-Tests

There will be a 2 question closed book pre-test for each experiment at the beginning of each lab. The possible questions for the pre-test for each experiment will be available on Mr. Climer's Web page.

There will be no make-ups for the pre-test if you are late for class or miss a class. It will be recorded as a ZERO

Lab Reports

Follow the format shown in this syllabus as to how to keep your lab notebook. Because of the pre-test, you will not be required to write theory or procedure in your report.

UNLESS TOLD OTHERWISE Finish the report write-up and turn in your lab notebook before you leave the lab. A total of 10 experiments will be performed. Please see the lab schedule.

Read your syllabus: the order of the labs is not necessarily the order in which they appear on my web page.

Final Exam

There will an open-lab notebook final exam covering all the labs at the end of the semester. (November 19th). It will be taken without a lab partner.

Absences

If you miss a lab you must bring a note from the Doctor, Police, or equivalent to ask for a make-up. You must bring in the signed note to me no later than next lab session you attend, or the first day you return to school. (Whichever is sooner). Failure to do this will result in a grade of zero for that missing lab.

All missed labs that have been approved for make-up, must be made up before the final exam.

Absolutely no labs will be made up after the final exam.

Arrange ahead of time to go to another section if you know of some important upcoming event that will prevent you from attending your regular class. You must get approval from

Mr. Climer before you can attend another section.

COURSE EVALUATION

Best 9 of 10 reports 80%

Final exam 20%

Total 100%

Midterm grades will be written on the inside cover of your lab notebooks. Uncompleted or missing labs, etc. count as ZEROS

Note: As per department policy 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

If you wish to get your final grade in the course before the University sends you notification by U.S. Mail, give me a self-addressed stamped envelope and I will mail it to you. **NO POSTAGE NO SEND!!!** Otherwise you will have to wait for UTC to send you your grades
I no longer post grades and I do not use Blackboard

General Science 1110L Laboratory Fall 2014 How to Write a Lab Report

Your Regular or weekly lab report consists of two parts.

Part 1 is your Pre-Test, which goes on a separate piece of paper.

Part 2 in the lab report that you will write in your lab notebook.

Part 1: 5 minute pre-test

At the beginning of the laboratory, students will be given a 5-minute pre-test. It will consist of two questions concerning that day's lab. You must come to class on time, as no late pre-tests will be given.

It is advisable that you read the material concerning the lab before you come to class and read over the possible pre-test questions. The pretest questions are located on my Web Page.

Part 2: Report

The parts of the report are as follows.

Objective: Write one or two sentences telling what the purpose of the experiment is. What was it designed to accomplish? (5 points)

Apparatus: Give a brief, clear description of the apparatus used. A sketch may be preferable if the apparatus is complicated.(10 points)

Original Data: This is the data you record while doing the experiment.(20 points)

Sample Calculations and Graphs: An example or sample calculation of each unique (different) calculation used in working with your original data must be shown in this section of the report. A sample calculation consists of the following parts.

a. The formula. $F = (m) (a)$ for example

b. Plug numbers and units into formula. $F = (5.00 \text{ Kg}) (8.00\text{m/s}^2)$

c. And finally the result with proper units. $F = 40.00 \text{ N}$

d. Each sample calculation should appear in your report on one continuous line, which may be continued on to the next line if the calculation exceeds the width of the paper. Each sample calculation must be separated by one or two blank lines from other sample calculations so it is clear which is which. Sample calculations must also be set apart from any text so as to make clear what text is a sample calculation and what text is a comment or information about that particular calculation. (Below is what a sample calculation should look like on the page in your lab notebook)

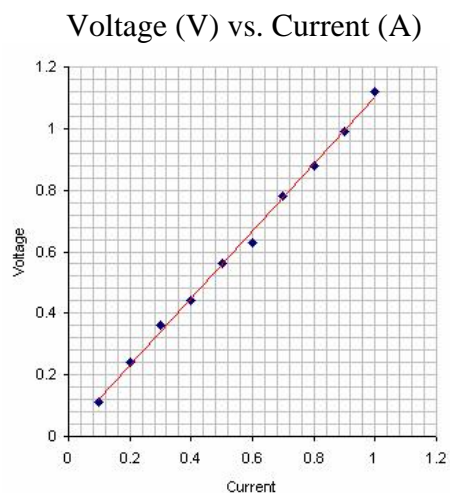
$$F = (m) (a) = (5.00 \text{ Kg}) (8.00\text{m/s}^2) = 40.00 \text{ N}$$

Also remember units are to be carried throughout all intermediate steps until the final answer.

Other types of sample calculations that must appear in this section include, but are not limited to; Calculations of the slope of a straight line, per cent error or difference calculations, averages, Standard Deviation, etc.

GRAPHS

Graphs must have both axes labeled with proper units and must have a title at the top of the graph showing what the graph is presenting, including units used for both axes. (Note a title for a graph is NOT the title of the experiment.)(25 points)



Results: The result is the answer to the objective. It could consist of a table if more than one result is expected. For example, if two methods are used to get the same result, then answers from both methods must be included in this section. Remember to indicate which result comes from which method. Per cent error and per cent differences from the "Best Experimental" or "True" value should appear here too. (10 points)

Conclusions: Give your opinion of what can be concluded from your results. If the objective was to prove a law using our experimental results, state whether that data supports this law within error limits. Give most likely sources of experimental errors that could have occurred while collecting data for the experiment. Remember personal errors (i.e. misreading a measurement on a meter stick or on a meter because of parallax, writing 2.54 when it really should be 2.45 etc. are not considered experimental errors in the context of this lab. **THEY ARE MISTAKES AND NOT EXPERIMENTAL ERRORS.**(10 points) This is also the section to put any answers to questions asked about the lab.

Note: Each section of the report is to be labeled as such and set apart from every other section so as to make it clear where one section of the report ends and the next section begins.