

PHYS271
General Physics III Laboratory
Spring 2018

Dr. Matt Severson
 PHY 1330 (Toll Phys)
 mseverso@umd.edu
Office hours by appointment

<i>Sec</i>	<i>Lab time</i>	<i>TA</i>	<i>email</i>
0101	M 9:00-11:50am	Mingshu Zhao	zmshum@terpmail.umd.edu
0102	W 9:00-11:50am	Mingshu Zhao	↑
0103	M 3:00-5:50	Mingshu Zhao	↑
0104	Tu 8:00-10:50am	Dan Zhang	dzhang16@umd.edu
0105	M 6:00-8:50pm	Chenghang Zhang	chenghaz@terpmail.umd.edu
0106	Tu 11:00-1:50	Dan Zhang	↑
0107	Tu 4:00-6:50	Yukari Yamauchi	yyukari@terpmail.umd.edu
0108	W 5:00-7:50pm	Kaixin Huang	kxhuang@umd.edu
0109	Th 1:00-3:50	Chenghang Zhang	↑
0110	W 2:00-4:50	Chenghang Zhang	↑
0111	Th 9:00-11:50am	Dan Zhang	↑
0112	Th 4:00-6:50	Yukari Yamauchi	↑
0113	Th 7:00-9:50pm	Kaixin Huang	↑
0114	Tu 7:00-9:50pm	Kaixin Huang	↑

All sections meet in PHYS271 lab room, **PHY 3213**.

NOTE: Details in this syllabus should be taken as tentative. I will notify you when changes are made.

IMPORTANT Note on Your Course Grade

To obtain credit for this PHYS271 laboratory course, you **MUST** complete **ALL 9** experiments and the two Exams.

Course Description

The 261-271 laboratory sequence gives an experimental introduction to classical and modern physics intended for students studying engineering or other similarly mathematical sciences. This second course in the sequence will consist of experiments in Electricity, Magnetism, Circuits, Light, and Optics.

Required pre-requisites: PHYS161, PHYS260, PHYS261 (**Mandatory**)

*If you are signed up for this course and have **NOT** completed the pre-requisites, **please contact me** as soon as possible.*

Required co-requisite: PHYS270 (**Mandatory** except for **Pre-med** students)

*If you are an **engineering student** and are **NOT** signed up for the co-requisite lecture, **please contact me** as soon as possible, if you have not done so.*

Required Textbook: The correct version of the Phys 271 lab manual for this course is available only through the **Expert TA** web system (see below). Printed editions older than Fall 2014 are entirely defunct for this course.

Expert TA

You will need to *purchase an account for **The Expert TA*** in order to access the lab manual AND to complete the required weekly pre-lab exercises through their online system. The **initial access code** for your section can be found on the course **ELMS** page or obtained from your TA.

Visit www.theExpertTA.com and choose student registration at the bottom right to proceed. You will be prompted for the initial section access code first, and then given the opportunity to purchase the manual in the steps that follow.

Lab manual access codes can also be purchased at the Campus Book Store, with the addition of a small surcharge.

ELMS Posts and Communicating with Me

I will clearly post all announcements, assignments, due dates, and other important information on the course ELMS page. I will also use ELMS to send course-wide emails when necessary. *It is **your responsibility** to find such information on ELMS.* Please check the page regularly for updates. I will be rather inflexible in dealing with problems that arise due to your failure to know things that have been said on ELMS.

That said, the TA or I will be happy to answer any other questions about course material, trouble with assignments, etc as they arise. Please feel free to send me email at any time for such reasons.

Grading Scheme

Pre-labs	10%
Experiment reports (9)	70%
Exams (2)	20%

Assignments

Pre-lab exercises: There are several pre-lab exercises associated with each experiment. The weekly assignments are found on the each Experiment page in the Expert TA system. Pre-labs are due *before* class begins and must be submitted prior to class start time for full credit.

Experiment Reports: You **MUST** complete the Excel lab spreadsheet for each of the 9 weekly experiments in order to receive credit for the course. Experiments are conducted with a partner, with whom you will share a pre-fabricated Excel template, which will contain all measurements, analyses, and answers to final questions. Partners *may* submit different answers or versions of the spreadsheet, but submissions may also be identical.

Groups of **3 students** must complete **2 spreadsheets**. ***NO groups larger than 3 are permitted UNDER ANY CIRCUMSTANCES***. If more than 2 students have the same computer station number, only 2 assignments will be graded!

The custom spreadsheet saving process will create 2 unique copies of completed work for individual submission. Completed assignments are submitted *by every individual student* via upload to the ELMS page; even if the work submitted by partners is identical, two submissions are required.

Exams: The remaining assignments for the course are two written exams, rather than culminating labs. Exams will consist of short answer questions, some of which will be similar to those in pre-lab or experiment final questions; other questions will be more directly related to experimental or procedural aspects of the experiments.

The exam is NOT during finals week. It occurs in your last regularly scheduled class session.

The week before each Exam, you will have an opportunity to do a lab-based review, which will cover the material on the Exam and provide you with sample questions to study.

Again, you **MUST** complete the Exams to receive credit for the course!

Attendance, Religious Observances, and University Closures

Since all experiments (and the exams) **must** be completed to receive credit for the course, **attendance** is effectively **mandatory**.

We are under no obligation to excuse your absence for weak or illegitimate reasons.

If you need to miss an experiment or exam for a religious observance or other legitimate reason known at this time, ***please notify me in advance***, and preferably ASAP.

If you miss due to illness or emergency, *please contact your TA ASAP* after the fact, and obtain documentation of the incident if possible.

In both cases, make-up for the experiment in question will be arranged accordingly, usually during designated make-up weeks.

If the **university is closed** due to inclement weather or some emergency situation, **I will contact you on ELMS** with further instructions.

Academic Integrity

Performing physics experiments can be a difficult and tedious process; all students will work with a partner on the experiments. The spreadsheet saving process will create 2 unique copies of completed work for individual submission.

There are a number of security features in each spreadsheet to make the unique identification of your work (with your partner) nearly inevitable. I will have zero tolerance for submission of work you were not present to complete. Such absurd behavior may result in an XF grade for the course and/or further action taken by the Student Honor Council.

Students with Disabilities

Accommodations will be provided to enable students with disabilities to participate fully in the course. Please discuss any needs with me at the beginning of the semester, so that appropriate arrangements can be made. Students who are registered with DSS and plan to take exams at their facilities should provide the pertinent authorization forms (electronic format is fine) *at least* one week prior to each exam date.

PHYS 271 Tentative Schedule

Spring 2017

<i>Wk</i>	<i>Week of</i>	<i>Experiment</i>
1	Jan 23	<i>No labs</i>
2	Jan 29	1 - Electric and Magnetic Fields
3	Feb 5	2 - The Multimeter and Oscilloscope
4	Feb 12	3 - Resistors and Capacitors
5	Feb 19	4 - Faraday's Law of Induction
6	Feb 26	5 - Resonance in LRC Circuits
7	Mar 5	6 - Review for Exam
8	Mar 12	7 - Exam 1
9	Mar 19	<i>No labs due to Spring Break holiday</i>
10	Mar 26	8 - Photovoltaic Cell
11	Apr 2	9 - Polarized Light
12	Apr 9	10 - Interference and Diffraction
13	Apr 16	11 - Optical Spectroscopy
14	Apr 23	Make up - Expts 1-11
15	Apr 30	12 - Review for Exam
16	May 7	13 - Exam 2