PHYS260
Summer II 2014

David Buehrle
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Title: General Physics: Oscillations, Waves, Thermodynamics, and Electrostatics
Lecture: Monday through Friday 11:00 AM – 12:20 PM, PHY 1204

Section 0201 **TA: Tigist Getaneh Shibeshi (3103B Toll, x5-5982, tigistgetaneh@yahoo.com)**

Discussion: Tuesday & Thursday 10:00 – 10:50 AM, PHY 1204

PHYS261 (Lab)
Tuesday & Thursday 1:00 – 4:00 PM, PHY 3219

Textbook: Randall D. Knight: *Physics for Scientists and Engineers*, 3e
Physics 260 is the second of a three semester introductory course on physics for engineers.

Math Background
You are expected to know differentiation, integration, elementary algebraic manipulations, and trigonometric rules. If you do not know any math step discussed in class, be sure to ask and we can clear that up in the discussion sessions.

Homework
To help facilitate the competing needs to give timely input and spend more of class time discussing new material rather than just going over homework, your assignments will be online. The online exercises are accessed through MasteringPhysics. I have observed in the past that there is a strong correlation between the steady effort needed to successfully complete homework and performance on examinations. Solutions to all homework assignments will be available on ELMS after their due date. I strongly encourage you ask questions about the homework during the discussion! To access Mastering Physics, see below

Assessments

20% of your semester grade is based on doing homework. Quizzes will come directly from the homework.

20% will be based on your ***correct method*** on the weekly quizzes. If you use correct procedure and calculate a reasonable answer with correct units, then you will receive full credit.

20% will consist of the labs. How the lab a graded is up to the TA, but the prelab is mandatory and must be turned in at the beginning of the lab. You must perform all labs to pass the class.

20% is from unit tests as listed on the schedule. Your grade is mostly determined by correct method as the quizzes, but also on correctness

20% from the final exam.

Extra Help
Feel free to call my office phone anytime. The best way to communicate is via email.
Your TA will post office hours

Week	Date			Subject	Assignment	Lab		
1	M	July	14	Mechanics Review	MP01			
	Tu		15	Oscillilatory Motion	MP02			
	W		16	Fluids	MP03			
	Th		17	Waves	MP04			
	F		18	Superposition of Waves	MP05			
2	M		21	Standing Waves	MP06			
	Tu		22	Doppler Effect & Beats	MP07			
	W		23	Matter	MP08			
	Th		24	**Waves Test**				
	F		25	1st Law of Thermodynamics	MP09			
3	M		28	Statistical Mechanics	MP10			
	Tu		29	2nd Law of Thermodynamics	MP11			
	W		30	Boltzmann Distributions	MP12			
	Th		31	Electric Force	MP13			
	F	Aug	1	**Thermodynamics Test**				
4	M		4	Electric Fields	MP14			
	Tu		5	Gauss's Law	MP15			
	W		6	Electric Potential	MP16			
	Th		7	Potential & Capacitance	MP17			
	F		8	Capacitance & Dielectrics	MP18			
5	M		11	**Electrostatics Test**				
	Tu		12	Current & Resistance	MP19			
	W		13	DC Circuits	MP20			
	Th		14	Kirchoff's Rules	MP21			
	F		15					
6	M		18	RC Circuits	MP22			
	Tu		19	**Circuits Test**				
	W		20					
	Th		21	Review				
	F		22	**FINAL EXAM**				

MasteringPHYSICS™

PEARSON Education

Dear Student:
In this course you will be using MasteringPhysics™, an online tutorial and homework program that accompanies your textbook.

What You Need:

- ✓ **Your UMD email address**
- ✓ **A student access code** (Comes in the Student Access Kit that may have been packaged with your new textbook or is available separately in your school's bookstore. Otherwise, you can purchase access online at www.masteringphysics.com.)
- ✓ **The ZIP code for your school:** 20742
- ✓ **A Course ID:** **MPBUEHRLE05544**

Register

- Go to www.masteringphysics.com and click **New Students** under Register.
- To register using the Student Access Code inside the MasteringPhysics Student Access Kit, select **Yes, I have an access code**. Click **Continue**.

  –OR– ***Purchase access online*:** Select **No, I need to purchase access online now**. Select your textbook and whether you want to include access to the eBook (if available), and click **Continue**. Follow the on-screen instructions to purchase access using a credit card. The purchase path includes registration, but the process may differ slightly from the steps printed here.
- **License Agreement and Privacy Policy:** Click **I Accept** to indicate that you have read and agree to the license agreement and privacy policy.
- Select the appropriate option under "Do you have a Pearson Education account?" and supply the requested information. Upon completion, the **Confirmation & Summary** page confirms your registration. This information will also be emailed to you for your records. You can either click **Log In Now** or return to www.masteringphysics.com later.

Log In

- Go to www.masteringphysics.com.
- Enter your Login Name and Password and click **Log In**.

Enroll in Your Instructor's Course and/or Access the Self-Study Area

Upon first login, you'll be prompted to do one or more of the following:

- Enter your instructor's MasteringPhysics Course ID.
- Select your text, if available, and **Go to Study Area** for access to self-study material.
- Enter a Student ID. Your instructor *may* request that you enter a special Student ID for this course. If so, be sure to enter this information EXACTLY as instructed.

Click **Save** and **OK**.

Congratulations! You have completed registration and have enrolled in your instructor's MasteringPhysics course. To access your course from now on, simply go to www.masteringphysics.com, enter your Login Name and Password, and click **Log In**. If your instructor has created assignments, you can access them by clicking on the **Assignments** button. Otherwise, click on **Study Area** to access self-study material.

Support

Access Customer Support at www.masteringphysics.com/support, where you will find:

- System Requirements
- Answers to Frequently Asked Questions
- Additional contact information for Customer Support, including Live Chat

Physics 261 - General Physics Lab: Vibrations, Waves, Heat, Electricity and Magnetism
Spring 2012 Syllabus

Course Description: General Physics: Vibrations, Waves, Heat, Electricity and Magnetism (Laboratory); (1 credit) Grade Method: REG/P-F/AUD. The lab includes experiments on mechanics, vibrations, waves, heat, electricity and magnetism. PHYS260 and PHYS261 (lab) must be taken in the same semester and the grade for the courses will be combined into a single grade for both. To pass, students must complete, with a passing grade, work in both PHYS260 and PHYS261. Students must pay a $50.00 laboratory materials fee.
Pre-requisite: None
Co-requisite: PHYS260
Textbook: PHYS261 Laboratory Manual, Fall 2010 Edition.

Instructor: Dr.David Buehrle, dbuehrle@umd.edu

TA Tigist G. Shibeshi, tigistgetaneh@yahoo.com

Office hours: 8:00a.m.-11:00am (Phys260 & Phys261)

Office: 3103B John Toll Physics Building

Time Tuesday & Thursday 1:00 – 4:00 PM, PHY 3219

Grading:

Regular labs	65%
Culminating lab	35%

Each individual lab will be graded as follows:

prelab questions (due before your lab session starts!)	15%
data (due at the end of your lab session!)	40%
analysis (due at the end of your lab session!)	30%
post lab questions (due at the end of your lab session!)	15%

Your score from the Physics 261 Lab will be combined with your score from the Physics 260 Lecture part of the course to produce one, overall, common score for both Physics 260 and Physics 261. The score from Physics 261 will be weighted 20% and the score from Physics 260 will be weighted 80% to produce this final score.

Course Outline:

You will generally attend lab twice a week. See the Schedule below.

Schedule for Physics 261- Summer 2013

Week#	Date	Experiment
1	July 15, 2014	Lab I: Introduction to Data and Error Analysis
1	July 17, 2014	Lab II: The Pendulum
2	July 22, 2014	Lab V: Position, Velocity and Acceleration
2	July 24, 2014	Lab III: Forced Harmonic Motion
3	July 29, 2014	Lab IV: The Vibrating String
3	July 31, 2014	Lab VII: Ideal Gas Law and Absolute Zero
4	August 7, 2014	Lab VI: Centripetal Force and Acceleration
5	August 12, 2014	Lab VIII: Equipotentials and Fields
5	August 14, 2014	Make-up/Practice for Culmulating Lab
	August 19, 2014	Culminating Lab/Final Exam

There are eight main experiments (Labs I -- VIII). Each lab session lasts three hours, and will begin with a 10 minute discussion of the lab by the TA. Don't be late. Each week you must turn in answers to the Prelab Questions just before the class starts. The prelab questions are found in the lab manual.

At the end of your lab session, you need to turn in a lab report. This report is to be turned in to the Physics 261 area in CANVAS. The report itself consists of an Excel spreadsheet that will contain all data taken, as well as an analysis and answers to the post lab questions. **The spreadsheet itself must be turned in at the end of the lab session (upload it to the Physics 261 site on CANVAS)**.

Post Lab Questions: At the end of each lab there is typically a set of "Final Questions". These are to be completed and turned in with your lab report spreadsheet at the end of each lab session.

Culminating Lab: This lab is a closed book practical exam, in which you answer questions about the experiments you have completed, and may require you to take data using the equipment from the prior lab sessions. To give you a better idea of what is involved, there is a practice lab for the Culminating Lab even though you are not required to attend this practice.

Missing Labs: In order to pass the class all labs, including the culminating lab, must be completed, without exception. Students are permitted to perform labs in make-up sessions only if

they have a legitimate reason for failing to attend a lab session. In the event that you miss a lab session, e-mail the instructor (in addition to your TA).

Physics 261 Labs, Summer II, 2014

Tuesdays and Thursdays 1:00 – 3:50

Instructor: David Buehrle, dbuehrle@umd.edu

TA: Tigist Shibeshi, tigistgetaneh@yahoo.com

Wk	Date	Expt #	Experiment Title
1	Tue July 15	1	Introduction to Error Analysis
1	Thu July 17	2	The Pendulum
2	Tue July 22	5	Position Velocity and Acceleration
2	Thu July 24	3	Forced Harmonic Motion
3	Tue July 29	4	The Vibrating String
3	Thu July 31	7	Ideal Gas Law and Absolute Zero Temp
4	Tue Aug 5		No Lab
4	Thu Aug 7	6	Centripetal Force and Acceleration
5	Tue Aug 12	8	Equipotentials and Fields
5	Tue Aug 14	1 - 8	Make-up Labs / Practice for Culminating Lab
6	Tue Aug 19	1 - 8	Culminating Lab / Final Exam
6	Thu Aug 21	~ ~	No Lab
6	Fri Aug 22	~ ~	Last day for SS-II