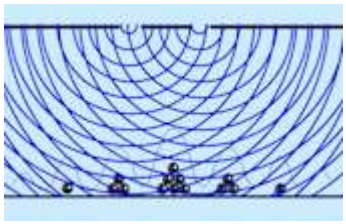
Monday	Tuesday	Wed.	W/Th Lab	Friday
4. Jan Introduction	*5. Jan* Chp 13.1-13.2	*6. Jan* Chp 13.3-13.4	Lab 1 Universal Gravitation	*8. Jan* HW1a due Chp 13.5
11. Jan Chp 13.6	*12. Jan* Chp 12.1-12.2 **HIP1 Due** HW1b due	*13. Jan* Chp 12.3-12.4	Lab 2 Torques in Equilibrium	*15. Jan* Chp 12.5-12.6 HW2a due
18. Jan MLK Day LBCC Closed	*19. Jan* Chp 12.7 **HIP2 Due** HW2b due	*20. Jan* Chp 12.8-12.9	Lab 3 Torques and Angular Acceleration	*22. Jan* Chp 12.10 HW3a due
25. Jan Chp 12	*26. Jan* Chp 14.1-14.2 **HIP3 Due** HW3b due	*27. Jan* Chp 14.3-14.4 Start work on scholarships and internships below	Lab 4 Archimedes' Principle	*29. Jan* Chp 14.5-14.6 HW4a due
1. Feb Chp 14 **HIP4 Due** HW4b due	*2. Feb* Exam 1	*3. Feb* Chp 15.1-15.3 SWE Dinner	Lab 5 Simple Harmonic Motion	*5. Feb* Chp 15.4-15.6 HW5a due
8. Feb Chp 15.7-15.8	*9. Feb* Chp 15 **HIP5 Due** HW5b due	*10. Feb* Chp 16.1-16.3	Lab 6 Doppler Effect	*12. Feb* Chp 16.4-16.5 HW6a due Rassmussen Scholarship Aps Due
15. Feb Presidents' Day	*16. Feb* Chp 16.8 **HIP6 Due** HW6b due	*17. Feb* Chp 17.1-17.3	Lab 7 Standing Waves	*19. Feb* Chp 17.4-17.6 HW7a due
22. Feb Chp 17 HW7b due **HIP7 Due**	*23. Feb* Exam 2	*24. Feb* Chp 33.1-33.3 NASA Internship Aps Due see https://intern.nasa.gov/	Lab 8 Diffraction	*26. Mar* Chp 33.4-33.6 HW8a due
1. Mar Chp 33 HW8b due **HIP8 Due**	*2. Mar* Old Ch. 25 Handout	*3. Mar* Old Ch. 25 Handout	Project Evaluation Additional noon presentation	*5. Mar* HW9a due Old Ch. 25 Handout
8. Mar Chp. 34.1-34.4 HW9b due **HIP9 Due**	*9. Mar* Chp. 34.5-34.7	*10. Mar* Chp. 35.1 **HIP10 Due**	Lab 9 Telescopes	*12. Mar* Review HW10 due EC HW due
15. Mar **Sec. 1** **Final Exam** **8am-9:50am**		*17. Mar* **Sec. 2** **Final Exam** **10am-11:50am**		Oregon Space Grant Scholarships Aps Due Week 1 of next term

PH 212

General Physics with Calculus Part II

Sect.#1 MTWF 8am on Zoom
Sect.#2 MTWF 11am on Zoom
Labs W/Th on Zoom
Find Zoom location at:
http://minirov.info/ph212



Instructor:
Greg Mulder

Office:
http://minirov.info/ph212
Phone: 541-908-4025 (cell)
E-mail: mulderg@linnbenton.edu

Office Hours:
MW 9-9:50am
T noon-12:50pm
Or e-mail any time! I usually can get back to you within 24 hours.

Textbook: "Physics for Scientists and Engineers: A Strategic Approach" 4th Edition

Online Homework assigned at:
https://moodle.linnbenton.edu

Class material available at:
http://minirov.info/ph212

Winter 2021
Linn-Benton
Community College

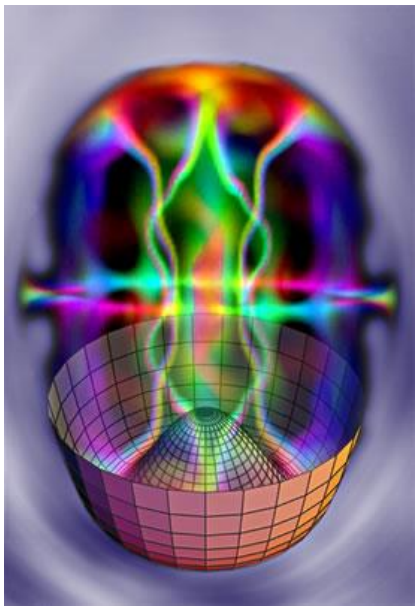
Ph 212: General Physics with Calculus

Linn-Benton Community College Winter 2021

Welcome to PH 212! As you discovered in PH 211, physics is the study of nature. Last term we spent time discovering how objects moved and how we used quantities such as Forces, Energy and Momentum to discuss the motion of objects alone and as they interacted together.

This term, we are going to start out by uniting all the concepts of PH 211 in order to understand a bit more about universal gravitation and rotational motion.

After that, we will work a bit on systems of larger numbers of particles. Then, after having spent around 15 weeks on the particle nature of the universe, we will begin to focus on wave descriptions of how everything works.



Physics is the study of the underlying forces of nature and the search for the understanding of the fundamental building blocks of the universe.

This term will be a lot like last term in that the class will have homework assignments through masteringphysics.com, two exams and a final and a set of laboratory activities. A new addition this term is that you, in a group of size one, two or three, will choose a topic upon which to do a little extra research and make a presentation upon what you learned.

There are a set of outcomes for Ph 211 and Ph 212 that have been developed by committees formed from industry executives, researchers and physicists. These outcomes specify the skills and abilities a student successfully completing Ph 212 will have. By the end of Ph 212:

- You will have a better understanding of nature and the physical universe.
- You will able to solve problems graphically and mathematically using the full tools available by a knowledge of first-year calculus.
- You will be able to collect data using a variety of tools.
- You will be able to accurately record and analyze data using a variety of methods.
- You will be able to present and analyze theories, ideas and conclusions.
- You have mastered and related the above outcomes to the topics and concepts specific to this course.

Whether you are an engineer, scientist, mathematician or just a citizen of our world, we expect that the tools you gain in this class, as well as all the classes that you take, will allow you to understand in a more complete manner the way the world works and how you can improve the quality of life upon it.

Meanwhile, as always the most important reason to study physics is because it is simply fun. Studying the nuts and bolts of physics takes lots of work. But it is these nuts and bolts that come together that form a bigger picture of how the universe works and with this a better understanding of the possibilities it affords us.

Course Prerequisites: PH 211 General Physics with Calculus with a "C" or better.
Important Note for Next Term: If you plan on taking Ph 213 in the Spring you need to complete MTH254 this term.

Final grades are determined as follows:

Basis for grading:	**Grading Scale:**	
Midterm Exams: 33%	90%-100%	A
Final Exam: 22%	80%-89%	B
Labs: 15%	70%-79%	C
Project: 8%	60%-69%	D
Moodle HW: 12%	< 60%	F
Hand-In Problems: 10%		

Other possible grades at LBCC:

I -- Incomplete. An 'I' grade is assigned if for some reason a student cannot complete all components of the course by the end of the academic term. To receive an 'I' grade, the instructor and student must agree upon a contract that will spell out when uncompleted work will be turned in. The student has until the end of the following quarter to complete all unfinished work

W – Withdraw A 'W' grade is given if the student withdraws from the class through the Registrar. W's do not impact GPA, but may impact completion scores for financial aid and other purposes. Look webrunner for the last day to withdraw from classes and other details.

Midterms and Final: There will be two midterms this term and a final exam this term. The final will consist of a conceptual part and an analytical part. The conceptual part will consist of 20-25 questions that will be either from the "Stop and Thinks" in the book, from the conceptual questions included at the end of each chapter. There is the option of a take-home final exam that we will discuss in class.

Labs: Laboratory work is a large part of the grade. Lab handouts are available each week at minirov.infp/ph212. A significant part of each exam will consist of topics covered in the lab. No lab scores will be dropped. However, you can make up one lab or improve one low score via the make-up lab assignment.

Lab Project: You will choose a topic to research and upon which to present your findings. This term-long project will be introduced in Lab 1 and most lab weeks we will work a bit more on projects.

Homework can be found in the Ph 212 Moodle site. If you don't have access to the Ph 212 Moodle site that means that you are probably not officially in the class or on the wait-list – contact your instructor immediately to fix this.

Hand-In-Problems (HIPs) are posted at http://minirov.info/ph212. Your ability to communicate your problem-solving skills is just as important as your ability to come up with a correct answer. Thus, you should neatly and clearly show all of your work for each HIP. Pay attention to each category in the scoring rubric that you turn in each week with your HIP.

Other LBCC Information: LBCC is committed to inclusiveness and equal access to higher education. If you have approved accommodations through the Center for Accessibility Resources (CFAR) and would like to use your accommodations in the class, please talk to your instructor as soon as possible to discuss your needs. If you believe you may need accommodations but are not yet registered with CFAR, please e-mail cfar@linnbenton.edu or call (541) 917-4789.

Student Basic Needs Assistance: Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the Single Stop Office for support at SinglestopatLBCC@linnbenton.edu or 541-917-4877.

Ph 212 – Score Keeper Winter 2021

Use this sheet to keep track of your overall score in the class. You can use this formula to find your total weighted grade or use the grade calculator at the course website http://minirov.info/ph212.

$$FinalGrade = \sum_i (percent\_weight) \bullet \frac{pts\_earned\_per\_catagory}{total\_pts\_possible\_per\_catatory}$$

Moodle Physics Homework 12%:

	Your Score	Out Of
HW1		
HW2		
HW3		
HW4		
HW5		
HW6		
HW7		
HW8		
HW9		
HW10		
ECHW		

Hand-In-Problems: 10%

	Your Score	Out Of
HIP1		
HIP2		
HIP3		
HIP4		
HIP5		
HIP6		
HIP7		
HIP8		
HIP9		

Labs: 15%

	Your Score	Out Of
Lab1		
Lab2		
Lab3		
Lab4		
Lab5		
Lab6		
Lab7		
Lab8		
Lab9		
MakeUp		

Lab Project 8%:

	Your Score	Out Of
Poster Rough Draft		20
Poster Final Draft		20

Midterms (33%) and Final (22%):

	Your Score	Out Of
Exam1		
Exam2		
Final		