|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Monday** | Tuesday | **Wednesday** | Th Lab | Friday |
| *6.Jan*Introduction: Chapter 13 | *7.Jan* | *8.Jan* | Lab 3Universal Gravitation  | *10.Jan*HW1a due |
| *13.Jan*Chapter 12Lab 3 due | *14.Jan*HW1b due | *15.Jan***HIP1 Due** | Lab 1Torques in Equilibrium | *19.Jan*HW2a due |
| *20.Jan*MLK DayLBCC Closed | *21.Jan*HW2b due | *22.Jan***HIP2 Due** | Lab 2Torques and Angular Acceleration | *24.Jan*HW3a due |
| *27.Jan*Chapter 14Lab 1 dueLab 2 due | *28.Jan*HW3b due | *29.Jan***HIP3 Due** | Lab 5Archimedes’ Principle | *31.Jan*HW4a due |
| *3.Feb*Exam 1**HIP4 Due**HW4b dueLab 5 due | *4.Feb* | *5.Feb*Chapter 15 | Lab 4Simple Harmonic Motion | *7.Feb*HW5a due |
| *10.Feb*Lab 4 due | *11.Feb***HIP5 Due**HW5b due | *12.Feb*Chapter 16 | Lab 6Doppler Effect  | *14.Feb*HW6a due |
| *17.Feb*Presidents’ Day | *18.Feb***HIP6 Due**HW6b due | *19.Feb*Chapter 17 | Lab 7 Standing Waves | *21.Feb*HW7a due |
| *24.Feb*Lab 6 and 7 HW7b due**HIP7 Due** | *25.Feb* | *26.Feb*Exam 2Chp 33/ | Lab 8Diffraction  | *28.Mar*HW8a due |
| *2.Mar*Chp 33HW8b due**HIP8 Due** | *3.Mar* | *4.Mar**Chap 25 handout* | Project Evaluation | *6.Mar*HW9a due |
| *9.Mar*Chp. 34.1HW9b due **HIP9 Due** | *10.Mar*  | *11.Mar***HIP10 Due**Chapter 35 | Lab 9Telescopes  | *13.Mar*HW10 dueEC HW due |
| *16.Mar* **Lab 9 due****Final** |  | *18.Mar*   |  |  |

**PH 212**

General Physics

with Calculus

****Part II

**Instructor:**

Daniel Summerton

**Sec. 1 Lec.: MW 5pm-6:50pm**

**Lab: Thur 2pm-4:50pm**

**Sec. 2**

**Lab: Thur 5pm-7:50pm**

**Office:**  MH 111

**Email: summerd@linnbenton.edu**

**Office Hours:**

Wednesday 7pm-8pm

**Help Desk Hours:** Check on-line for MH Atrium, Learning Center and Sat. Session Hours.

**Course Web Address:**

http://minirov.info/ph212

**Homework:**

http://www.masteringphysics.com

Course ID:

[PH212WINTER2020](http://session.masteringphysics.com/myct/assignmentListTeacher?courseID=1012045)

**Winter 2020**

**Linn-Benton**

**Community College**

## Ph 212: General Physics with Calculus

**Linn-Benton Community College Winter 2020**

W

elcome 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 Information Ph 212 – Winter 2020

**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.

**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.

Final grades are determined as follows:

**Basis for grading:**

Midterm Exams: 33%

Final Exam: 22%

Labs: 15%

Project: 8%

Mastering HW: 10%

Hand-In Problems: 12%

**Grading Scale:**

90%-100% A

80%-89% B

70%-79% C

60%-69% D

< 60% F

**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 manuals are available in the campus bookstore as are the required lab notebooks. 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 will present your topic to a group of experts and/or the general public. A list of possible projects will be passed out during the first week of classes. Presentation dates vary depending upon the project – poster deadlines are Week 7 for the rough draft and Week 8 for the final draft.

**Homework** comes from the end of the chapters in our text book and are to be completed online at [www.masteringphysics.com](http://www.masteringphysics.com). Access to this website comes with your textbook. The course code this term is: [**PH212WINTER2020.**](http://session.masteringphysics.com/myct/assignmentListTeacher?courseID=1012045)

**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:** If you have emergency medical information for your instructor, need special arrangements to evacuate campus, or have a documented disability, please meet with your instructor, by appointment, no later than the first week of the term, to discuss your needs. If you have a documented disability that will impact you at college and you seek accommodations, contact the Office of Disability Services (ODS) for intake and to document your disability with LBCC. Then, each term, at least two to three weeks prior to the start of classes, submit your “Request for Accommodations” form to ODS. ODS may be reached from any LBCC campus/center by email to ODS@linnbenton.edu or by calling 541-917-4789.

Ph 212 – Score Keeper Winter 2020

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.

**Mastering Physics Homework 10%:**

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

**Hand-In-Problems: 12%**

|  |  |  |
| --- | --- | --- |
|  | 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 |
| Class Presentation |  | 10 |
| Poster Rough Draft |  | 20 |
| Poster Final Draft  |  | 20 |
|  |  |  |

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

|  |  |  |
| --- | --- | --- |
|  | Your Score | Out Of |
| Exam1 |  |  |
| Exam2 |  |  |
| Final |  |  |
|  |  |  |