Syllabus

Ph 211: General Physics with Calculus (https://linnbenton.zoom.us/j/4893440443)

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Office Hours: Discord Chat https://discord.gg/wgU6EnHnS9 | Zoom on Sunday 4-6pm (https://linnbenton.zoom.us/j/4893440443) | by Appointment | call or e-mail any time!

Class Structure

Wednesday 5-6:50pm: We will meet on zoom. We will focus on key concepts and reserve most of class for problem solving and doing physics.
Thursday 5-8pm: We will have lab in Madrone Hall Room 114.
Weekly: There will be 2 hours of engagement videos and activities for students to study on their own. Since we only meet once per week, most of the weekly material will be designed to introduce you to new concepts. This is what I would call the primer material for Wednesday's class. It will be important that all weekly material be finished prior to our Wednesday class, so you are well prepared to participate and benefit from the actual "hands" on problem solving activities we work through.

Materials

We are using the textbook by R. Knight "Physics for Scientists and Engineers: A Strategic Approach with Modern Physics and MasteringPhysics (3rd or 4th Edition)". You do not need access to MasteringPhysics or the other online material. This means that you can save a lot of money by purchasing a used textbook at either the LBCC bookstore or online. Please do purchase a book right away, looking at past student success, it is very important that you have your textbook on day-one of classes.

We will use proper lab notebooks. The bookstore has them, but you may also find them from Amazon LINK. Digital records, word processing, or tablets will not be permitted as your primary lab notebook, so please get one of these notebooks before our first lab on Thursday September, 30th.

Physics is the study off how things behave according to the known physical laws of the Universe. Applications of physics have given us GPS, cell phones, televisions, computers, lasers, satellites, space flight, and developing insights into the universe that drives the imagination and sparks innovation.

As you complete Ph211 you should:

- Describe and explain position, velocity, and acceleration in the motion of physical objects.
- Properly record desired data and correctly interpret results of a physics experiment.
- Solve motion problems using: algebra, calculus, computational and graphical methods.
- Solve physics problems involving Newton's Laws.
- Solve problems using conservation laws (i.e. momentum, energy).
- Evaluate the reasonableness of a calculated, measured and/or presented result.

Math requirements for this class and for physics in general

Math is the language of a large part of what we do in physics. To be able to do well in Physics, we've created the following prerequisites for this class:

- Completion of MTH 251 (Differential Calculus) with a "C" grade or better.
- Completion of MTH 252 (Integral Calculus) with a "C" grade or better.

Physics is a field that heavily relies upon mathematics. This is because mathematics is a compact language that allows physicists to speak to one another regardless of what part of the world they might come from. An added benefit of this class is that you will leave it with a greater understanding of just what all that math you've been studying is about.

Grading Scale for this course

Final grades are determined from the below components of the course.

Basis for grading:	**... Grading Scale:**
Midterm Exams: 30%	90%-100% A
Final Exam: 20%	80%-89% B
Labs: 15%	70%-79% C
Hand-In Problem: 15%	60%-69% D
Homework: 15%	60% or Less: F
weekly quizzes: 5%	

An **I** -- Incomplete grade may be assigned if a students is unable to complete the course by the end of the academic term. To receive an 'I' grade, the instructors and student must agree upon a contract that will explicitly define when uncompleted work will be turned in. The student has until the end of the next term to complete all unfinished work.

Exams:

There will be two mid-term exams and one comprehensive exams for the term.

The Final

One aspect of physics is that every week builds upon what was learned in the weeks previously. As a consequence, by nature, the final exam is comprehensive. A large fraction of the Final will come directly from the conceptual questions that will be given to the class in the textbook and on Moodle.

Labs

Much of the learning that goes on in physics happens in the lab. Laboratory work is consequently a large part of the grade. A significant part of each exam will consist of topics covered in the lab. By department policy, you must complete at least 7 labs in order to pass the class. Make sure that you complete the pre-Lab on Moodle before you come to class and the Post-Lab Quiz on Moodle before you leave lab each day. Lab reports will be turned in through Gradescope, but you will be expected to keep a physical lab notebook.

Homework

Homework assignments can be found on Moodle and come from material in each chapter. You can get to Moodle by going to https://moodle.linnbenton.edu/. Homework solutions and other materials will also be available on Moodle. On homework assignment you get as many attempts as you want to take until you get the correct answer. Many questions have feedback to read after you submit your answer. There are three types of homework questions: conceptual questions, exercises and problems.

Conceptual questions are best done with a friend. Although you can do them alone, I'd suggest you work with someone from class on these and don't look at the answer until you have really thought about your pre-conceptual thinking.

Exercises are one-step problems. For most exercises I include information on where in the textbook you can find information that covers the exercise. If you find yourself stuck on an exercise for more than 15 minutes, it is best to find someone from class or our help-desk, TASS or tutor sessions to help you out. In such cases, usually another person can point you in the right direction in a fairly short period of time.

Problems usually have multiple concepts within them. Practicing and solving problems is a large goal of the class.

Hand-In Problems

Almost every week a homework problem will be due that is to be turned in on Gradescope. The Hand-In Problem's purpose is to allow you to receive feedback on how you present your work.

Participation

Make sure that you sign in as yourself when you attend class on Zoom each day. Zoom will automatically capture your attendance. If you can't make it to class on a day, you can instead watch the recorded Zoom lecture that will usually be available by the end of the day – as you watch the Zoom video write a short journal entry that records your clicker responses and summarizes the day – turn this journal in at the end of the term for credit for the days you didn't directly attend class.

Classroom requirements for all students and faculty due to Covid-19

Linn-Benton Community College has established rules and policies to make the return to the classroom as safe as possible. It is required for everyone to follow all of the campus rules and policies. To participate in this class, LBCC requires all students to comply with the following:

MASKS REQUIRED AT ALL TIMES IN CLASSROOM. Wear a mask or face covering indoors at all times. Your mask or face covering must be properly worn (fully covering nose and mouth and tight-fitting). Mesh masks, face shields, or face covering that incorporates a valve designed to facilitate easy exhalation are not acceptable. If you have a medical condition or a disability that prevents you from wearing a mask or cloth face covering, you must obtain an accommodation from CFAR (Center for Accessibility Resources) to be exempt from this requirement. State guidelines do not limit class size. Physical distancing accommodations can be made upon request and cleaning supplies are also available for personal use.

Students in need of accommodations

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 visit the CFAR Website for steps on how to apply for services or call 541-917-4789.

Other important information

The Add/Drop date and date for payment has recently been moved to the 2nd Monday of the term. The good news is that this change allows for financial aid to be disbursed a week earlier than in the past.

Students in need

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 Roadrunner Resource Center at https://www.linnbenton.edu/rrc. You can also let your instructor know is you feel you need assistance.

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