



THE UNIVERSITY OF BRITISH COLUMBIA

Irving K. Barber Faculty of Science
Okanagan Campus

Department of Computer Science, Mathematics, Physics and Statistics

PHYS 112 001

Introductory Physics for the Life Sciences I

2021-2022 Winter Term 1

Online

Instructor:

Dr. John Hopkinson

Office: SCI 258 (mainly working off campus)

Phone: 250 807 9504

E-mail: john.hopkinson@ubc.ca

Lab Manager:

Hiroko Nakahara

Physics.Labs@ubc.ca

Tutorial Leaders:

T01 Olivia Stanton

Message through Canvas (tutorial shell)

T03 Ainsley Light

Message through Canvas (tutorial shell)

T05 Alexis Gauvin

Message through Canvas (tutorial shell)

T08 Viv Kiss

Message through Canvas (tutorial shell)

T10, T11 Matthew Woo

Message through Canvas (tutorial shell)

T02, T04, T06, T07, T09, T12 Andy Ogilvy

Message through Canvas (tutorial shell)

Supplementary Learning Leader: Dyuti Raghu

Message through Canvas (Main course shell)

Synchronous Meeting:

Monday 13:00-13:50

Canvas Zoom

Friday 13:00-13:50

Office Hour:

Wednesday 13:00-14:00

Canvas Zoom (Main Course Shell)

Lectures:

Available Monday

SL sessions:

TBA

Course Description:

Introduction to mechanics primarily for students majoring in the life sciences (e.g. biochemistry, biology, microbiology, pharmacy, human kinetics, human geography or psychology). Particle kinematics and dynamics, work and energy, momentum, gravitation, rigid body motion, fluid statics and dynamics with applications to the biological sciences. Credit will be granted for only one of PHYS 111 and **PHYS 112**. Students with Physics 12 may apply for a tutorial exemption. **[3-3-1]**

Prerequisites: One of MATH 12, PREC 12, MATH 125 or MATH 126. Physics 11 and Physics 12 are strongly recommended.

Corequisites: Concurrently taking MATH 100 is strongly recommended, as it is a prerequisite for PHYS 122.



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Learning Outcomes: (Upon completion of this course, students will be able to:)

1. Understand the conceptual framework of classical mechanics having **confronting** any **misconceptions** they might have previously held (encouraging “Newtonian” thinking).
2. Demonstrate the power and simplicity of effective **model building**.
3. Make use of developed **skills**: proportional reasoning, dimensional analysis, physical reasoning, pictorial representations (free-body diagrams), reading for understanding (asking why is this true?), that are critical for every upper year science course.
4. Apply **advanced problem-solving**, **written** and **verbal** communication skills.
5. Apply developed **graphical approaches** to an understanding areas and slopes.
6. Understand and appreciate the crucial role that **experiment** plays in the scientific method.
7. Be prepared for PHYS 122.
8. Recognize that **physics is everywhere**, and see its relevance to their area of study and life!

Passing Criteria: To pass this course you must achieve at least 50% overall. In addition, you must achieve at least 50% in the laboratory component, and receive a score of at least 40% on the final exam.

Course Format:

This course will have a blended form of learning (i.e., both synchronous and asynchronous). While the lectures will be pre-recorded and posted (asynchronous), this course also includes live activities (synchronous; assigned and moderated virtual discussion groups) which will require a microphone; a camera (recommended) and most importantly, a quiet space.

Examinations will be completed online during the **scheduled course time**

Video Lectures: Video lectures will be posted weekly on or before Mondays to the main course shell (Phys 112 001 2021W1) in Canvas. Each short lecture will contain at least one in-video quiz. There will be several short videos each week. The goal of these quizzes is to help you stay engaged with the material as you watch the video. You may choose to discuss the questions with classmates prior to submitting a response. It is important to ensure that the final response submitted is your own. To ensure they are counted for credit, in-video quiz questions should be answered the week they are posted. Video lectures are meant to be viewed within platform in which they are posted. These videos are not to be captured, downloaded, or ripped to another format. **Distribution of this material to a third party is forbidden.**

Framework: change, cause and effect, simplifying models	(1 week) Ch. 1
Kinematics: concepts of motion developed graphically and mathematically, projectile and circular motion	(4 weeks) Ch. 2,3,7
Dynamics: Newton’s laws for linear and rotational motion, free body diagrams, vectors, types of forces, gravitation, torque, springs	(5 weeks) Ch. 4-7



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Conservation laws: why some things stay the same, impulse, linear
and angular momentum, work and energy

(3 weeks) Ch. 8,10,11

Fluids*: hydrostatics and hydrodynamics

(1 week*) Ch. 9*

*The number of weeks devoted to a particular topic are approximate. If time permits, we may treat topics with a *.*

During lecture, I will try to present material in a clear and logical way, however you must take responsibility for your own learning. Please ensure you are prepared, **do the assigned readings**. Come to office hours or use the muddiest points and chat function on Zoom during the synchronous clicker sessions to *ask* questions, *ask* for clarification and *contribute* to discussions. The more active you are in the classroom, the more you will benefit from the lectures.

Required reading: A tentative schedule of topics covered by week is posted on main course shell (PHYS 112 001 2021W1) in Canvas. This includes chapters to be covered, suggested readings, homework topics (including when they open and close), tutorial topics (added as we go along) and lab topics with dates listed by week. This will be periodically updated throughout the term. You should consult this schedule and read the suggested chapter readings corresponding to the date in question. In the event we are ahead of, or behind, the tentative schedule you should read the material corresponding to the material that we just covered. You are advised to view this list as required reading that will prepare you for lecture or add depth to the lecture you have participated in. When you read, do not read to try to absorb the knowledge, but read to *understand* the material, you should continually ask the question, “why is this true?”

Lab Time: You must register in one of the laboratory sessions. Labs will start the week of Sept. 20, although there may be an introduction to the lab in the week of Sept. 13. If you plan to register in XM1 and are claiming previous lab credit, you must fill out the XMT Lab Waiver exemption form found at <https://cmpps.ok.ubc.ca/undergraduate/student-resources/forms/> by Sept. 15. Lab time should be used to perform the laboratory experiment, and each experiment should be completed during your scheduled laboratory time. You are responsible for pre-purchasing the equipment required for the labs, completing each weekly prelab prior to your lab period, and logging in on time to your lab.

Tutorials: Tutorials will occur on Zoom (PHYS 112 001-002 Tutorials 2021W1). If you have not completed Physics 12 or its equivalent, you must register in and participate in one of the tutorial sections. Tutorials will start in the third week of classes (week of Sept. 20). You are responsible for logging on time for your tutorial each week. Make sure you are in a quiet space where you can actively participate in discussion and problem solving. You will require a high-speed internet connection, audio and video transmitting capability. Tutorial times (all PST):



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T01	Thursday	14:00-14:50	T07	Monday	12:00-12:50
T02	Wednesday	12:00-12:50	T08	Tuesday	10:00-10:50
T03	Wednesday	10:00-10:50	T09	Wednesday	11:00-11:50
T04	Monday	8:00-8:50	T10	Thursday	8:00-8:50
T05	Friday	8:00-8:50	T11	Tuesday	8:00-8:50
T06	Wednesday	8:00-8:50	T12	Monday	14:00-14:50

Synchronous Meetings: We will have 2 synchronous meetings per week. All Synchronous meetings will take place through Zoom. I>Clicker cloud will be used during every meeting, except during tests and surveys which will also be held during these slots. During these meetings there will be a variety of activities, including discussion of muddiest points and practice of problem-solving strategies, and group problem solving. All mid-term evaluations will occur during our synchronous meeting times.

Office hours: My office hour is Wednesday 13:00 – 14:00 PST. All office hours will take place with Zoom, and can be accessed through the main course shell (PHYS 112 001 2021W1) in Canvas. You are encouraged to use your camera and/or screen share, when asking questions, but it is not required.

Required Materials:

Required Textbook: An e-Text of this textbook (University Physics for the Life Sciences first edition) and a 24 month access to the Mastering Physics homework site (ISBN 9780135821299) for this course can be purchased from the bookstore (<https://bookstore.ubc.ca/textbooks>) and should cost \$115.00. Note that you should buy it from the bookstore rather than directly from Pearson because it is cheaper at the bookstore.

If you would like a physical copy of an earlier version of this text, “University Physics for the Life Sciences Update Edition”, Knight, Jones and Field, (ISBN 9781323807903), the Green Text (the used bookstore UNC 103) may be selling these. **(Please note that you will still need to purchase the online homework system).** Only in this case should you be buying access to Mastering Physics only through the bookstore (<https://bookstore.ubc.ca/textbooks>) which should cost \$56.65.

General Technology: In order to engage fully with this course online, students are required to have a laptop or desktop computer with an attached camera, and a stable Internet connection. Students are encouraged to check out this link: <https://keeplearning.ubc.ca/setting-up/>



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Laboratory: The lab manual will be available for download from the Lab Canvas course shell. The lab manual will include a list of common items that are required for the lab. You are responsible for acquiring these items (either by locating them in your home, or by purchasing them).

Other resources: If you are looking for another perspective on a physics concept you could also try looking at algebra-based texts available in our library: "College Physics", by Eugenia Etkina, Michael Gentile and Alan Van Heuvelen, 1st edition, Pearson Education, 2014, QC21.3 .E85 2014, which has nice discussions on how to read physics texts, how the scientific process works, and clear demonstrations with QR codes; or "College Physics" by R. A. Freedman, T. G. Ruskell, P. R. Kesten and D. L. Tauck, 2014, QC21.3 .F745 2014, which does a good job of relating physics concepts to biological applications and of discussing common first term misconceptions. Another potentially useful free resource is "College Physics", by P. Urone, R. Hinrichs, K. Dirks and M. Sharma, OpenStax College, 21 June 2012. This is an open source text that is of reasonably high quality on many topics. Free electronic copies (pdf) of this text can be downloaded from the openstax website (openstax.org). You could also look at Knight's physical sciences (calculus-based) text: Physics for scientists and Engineers: a strategic approach: with modern physics, QC23.2 .K654 2008 or QC23.2 .K65 2013.

Required Homework: You are required to purchase access to a Mastering Physics account (Knight, Jones and Field), where your online homework will be given. The e-text for this course comes with Mastering Physics included in the cost as discussed above. If you took a previous physics course, and still have access to Mastering Physics for a different text published by Pearson, please contact me if you intend to continue using this text rather than purchasing a new one.

Course Evaluation:

Laboratory component:	Tutorial	No tutorial
Laboratory Experiments	20%	22%
Lecture component:		
Survey Participation	1%	1%
Clicker/Quiz Questions	3% (+ up to 2% bonus)	5% (+ up to 2% bonus)
Muddiest Point	1% (bonus)	1% (bonus)
Assignments	10%	12%
Tutorial assignments	6%	N/A
First term indiv. test (Oct. 15)	8.5%	8.5%
First group test (Oct. 18)	1.5%	1.5%
Second term indiv. test (Nov. 5)	8.5%	8.5%
Second group test (Nov. 15)	1.5%	1.5%
Examination component		
Final Exam: (TBA)	40%	40%



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To pass this course you must achieve at least 50% in the laboratory component, and receive a score of at least 40% on the final exam. You cannot receive more than 100% (i.e. 40/40 or 38/38) on the Lecture Component. The final exam period this year runs from Dec. 11 to Dec. 22 inclusive this year, including Saturdays.

Note: Any requests for changes to final exam times must be sent to the office of the Associate Dean of students (fos.reception.ubco@ubc.ca)

Final grades will be based on the evaluations listed above and the final grade will be assigned according to the standardized grading system outlined in the UBC Okanagan Calendar.

Expectations:

Survey: The physics program is conducting a survey of its first-year courses. We are trying to improve our courses and make the courses more useful to those who take them. This evaluation will take the form of two questionnaires, one at the beginning of the term and one at the end (September 10, and December 3). The questionnaire has two parts: Part 1 is about physics and (optional) Part 2 is about you, what aspects of our course you find helpful, and your background. You will receive 0.5% towards your final grade simply from completing both the pre- and post- lab/class surveys. The survey is timed, and should only be taken once.

Labs: The lab is your chance to test the ideas that we discuss in class. When our survey indicated that many students entering this class strongly held onto beliefs counter to Newtonian mechanics we rewrote the labs to try to help you to confront these ideas. Detailed information about the grading of the lab marks is given on the Canvas lab shell for Phys 112 (PHYS 112 Labs 2021W1). Labs start the week of Sept. 20 and each week's lab will be published about a week prior to the scheduled labs. You are expected to read each week's lab and complete the prelab prior to attending your session of the laboratory (they are due at 11:59 pm the night before your lab). Failure to complete the prelab or unexcused lateness prior to entry into your lab session may result in denial of entry. Any students with prior lab credit (i.e. if you passed the lab component of the course previously with a grade of 60% or higher) must fill in an XMT Lab exemption found at <https://cmps.ok.ubc.ca/undergraduate/student-resources/forms/> by Sept. 15 to ensure that they do not need to retake the lab. The lab manual contains a lab syllabus (e.g. what to do if you miss a lab for a valid medical reason, penalties for late submission of work) and a detailed schedule of when labs are due. You must pass the lab to pass the course.



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i>Clicker Cloud/Video Quizzes:

We will use the i>Clicker Cloud system during every synchronous meeting. A maximum of 3% (Tutorial) or 5% (No Tutorial) can be earned through participation in clicker questions over the course of the term. To earn clicker marks you must set up your i>Clicker through Canvas (<https://lthub.ubc.ca/guides/iclicker-cloud-student-guide/>). Please do this as early as possible! You should frequently check that your i>Clicker scores are non-zero in Canvas (Grades) to ensure that you are correctly operating your i>Clicker Cloud system.

The use of clickers is one way that we encourage your active participation. Educational research has repeatedly demonstrated that active learners are more effective learners. I will also use clickers to motivate some of our discussion topics. I want to hear what you are thinking about material as we cover it, and sometimes to demonstrate that it's expected that you enter first year physics with some core beliefs that seem to explain the phenomena that you encounter on a daily basis, but might not be fully consistent. In this spirit, I will raise some common misconceptions to show how prevalent they are. The clickers will also let me (and you) know in real time if I have gone too quickly over a difficult concept and helps us to focus on how we address these difficulties.

You will gain clicker points for participation on all questions, and additional points for correct answers on most problems for which we have covered the relevant material. I generally encourage you to discuss clicker questions in groups or through chat prior to submitting your answers, unless I specifically ask for individual work. Under no circumstances should you be clicking for another person in the class, this is a form of academic misconduct that will not be tolerated.

Video Quizzes can be completed during the viewing of the videos. A maximum of 3% (Tutorial) or 5% (No Tutorial) can be earned through participation in video quiz questions over the course of the term. You will gain points for participation on all questions, and additional points for correct answers on most problems. Video quizzes will be posted most Mondays, and should be completed by the following Sunday 11:59 pm.

Combined, you can earn a maximum of 3%+2% bonus = 5% (Tutorial) or 5%+2% bonus (Non-Tutorial) through participation in both the i>Clicker Cloud synchronous questions and the asynchronous video quizzes.

Muddiest point: Each Friday following lecture you'll be invited to fill out a survey asking you to describe in one sentence what you found to be the most confusing (or muddiest point) from the past week's lectures, and what you found to be the most interesting point. **The survey will be open for 48 hours, and will close Sunday at 15:30.** This is a metacognitive activity, presenting you with an opportunity for you to reflect on which concepts you understand and which concepts you have not yet fully grasped.



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Such activities can help you to become a more effective self-regulated learner in any discipline according to education research. Each week I'll show you a few common comments from each side during the synchronous meetings. I'll use this as a starting point for discussions, clarifications and explanatory group problem solving clicker questions. To earn one percent on your grade you are asked to fill out the muddiest point survey for at least three different weeks.

Assignments: You are encouraged to discuss concepts and approaches to assignment problems with your classmates, as this will benefit both you and the people you have discussions with.

However, **all work that you submit for grading must be your own.** Copying answers to assignment questions from online solution manuals or paid solution services, or providing such solutions to other students is a misrepresentation of your own work and falls under the category of academic misconduct and will be dealt with following the policy on Academic Integrity shown later in this syllabus.

When you log on to Mastering Physics (<https://www.pearson.com/mastering>) you will select Student under Register, then select OK! Register now. You will need to enter the instructor's Course ID: **hopkinson23482** and select Continue. If you have an account already you would enter your Pearson username and password, otherwise select Create and complete the required fields. You will then have to enter your access code from purchasing access through the bookstore. Then select Go To My Courses. Under PHYS 112 Fall 2021 you will see that we will have an online assignment assigned every Friday at 9:00 am, and due the following Friday at 9:00 pm PST. As this is a US-hosted website, you will not be required to provide Mastering Physics with personally identifiable information about yourself (usually we would run Mastering Physics through Canvas (which has Canadian servers) to remove any personal identification, but this feature has not yet been added). If you choose to use a coded name for yourself, please let me know how to identify your work in Mastering Physics.

In addition to these assignments, there is a bonus assignment to introduce you to how to approach different problem types created by Mastering Physics, with 20% of the weight of a normal assignment.

If you have difficulty with Assignment 1: A Physics Primer, please seek help from the Student Learning Hub. They have many online skill support and tutoring programs: <https://students.ok.ubc.ca/academic-success/learning-hub/>.

For the online assignments you are strongly recommended to sketch answers to each homework question on a sheet of paper, keeping your answers in terms of variables until the last moment. Don't try to solve the problems in your head or using only a calculator, you will learn and retain far more by writing out your solutions in detail. Keep your written solutions as a study reference, and they can also aid in the discussion with me of any unresolved questions you have.



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Tutorial Assignments: If you have not previously completed Gr. 12 physics or its equivalent, you must sign up for and attend a weekly tutorial section. All students registered in tutorials will have 6% of their grade determined by their tutorial score. Tutorials are low stakes problem solving sessions where you are invited to actively discuss and come to consensus with group members on how to approach the problems of the week, giving you practice extracting useful information from a word problem and putting into practice problem solving strategies.

All work that you submit for grading must be in your own words (not your group's nor the solutions'). At the end of the tutorial you will be asked to upload your work to Canvas prior to logging off the system. **Do not log off the system prior to confirming that your upload has been successful.**

At the beginning of each tutorial session (except the first one) you will be given a marking rubric and will be given 10 minutes to grade your peer's paper from the previous week, with a marking rubric from which you will grade your peer's paper. You will receive marks for both the work on your own tutorial (90%), and the fair grading of your peer's work (10%). It is not acceptable behaviour to screen capture or otherwise download or copy solutions and share it with other students prior to their completion of the tutorial. Such behaviour is an example of academic misconduct (see the section on Academic Integrity below) and violators of this policy will have their names submitted to the Dean's office following a meeting with me. Graded work will be made available online in the following tutorial session. If you miss your tutorial session, you may attend a different tutorial session for that week. Tutorial work submitted after the completion of all tutorials for the week **may not** be graded. No work submitted after the next week's tutorials have begun will be considered. Students with Gr. 12 physics who register for XM2 designation will still be able to download and work through the weekly problem sets for practice, but will not receive credit for them.

Term tests: Individual tests will be scheduled during our synchronous class time (13:00-13:50) on Oct. 15 and Nov. 5 in Canvas using a LockDown Browser with Zoom on a secondary device. We will use two-stage testing during our tests. In two-stage testing you are given an individual test followed by a group test the following class (on Zoom the following synchronous class, Oct. 18 and Nov. 15 respectively, 1 paper per group). This encourages you to actively think about challenging questions, and come to a group consensus on the correct answer. You will be randomly assigned to groups through break-out rooms in Zoom. A scientific calculator will be permitted. While you are encouraged to prepare for exams by studying with fellow students, no form of communication between students will be allowed during the individual exam period, and multiple versions of tests may be used to discourage copying. A formula sheet will be provided for all tests and exams. Uploading to or checking Chegg.com or any other web pages during tests is academic misconduct.

Final Exam (During Exam period, TBA)

Technical Issues

There are a number of supports on campus to assist students with technical issues. Students are encouraged to familiarize themselves with the software required for their courses. For example, the



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Student Learning Hub's technical support [<https://students.ok.ubc.ca/academic-success/learning-hub/tech-support-for-online-learning/>].

Missed Assignments and Exams

Tutorials: Late tutorial assignment sheets will not be accepted for any reason.

Homework: Late assignments are not accepted by Mastering Physics. If you feel that you have a legitimate reason for missing ONE assignment deadline, send me an email prior to the deadline, and complete the assignment as soon as possible even if I don't respond immediately. However, the bonus marks and assignments are there in to account for you missing a few things, because life happens, and in part because I don't expect you to answer every question correctly. There will not be make-up midterms. You are strongly encouraged to complete all of the assignments.

If you miss a midterm for a legitimate reason, email me with documentation that explains your absence (a doctor's note or a UBC declaration of absence due to illness or injury (https://students.cms.ok.ubc.ca/wp-content/uploads/sites/90/2019/06/student_declaration_of_absence_due_to_illness_201861804.pdf), explaining that illness or injury prevented you from completing the midterm for example). In this event, your missing midterm score will be replaced with an average of your scores on your other midterms and your score on the final exam.

For all assessments, examinations, and tests it is the responsibility of the student to ensure that any technical issues are reported to the instructor immediately. If you cannot connect with the instructor, please document the issue or technical concern via a screenshot. This is the only circumstance in which it is appropriate to document (i.e., screenshot) exam material. Failing to report technical issues in a timely manner, may result in the issue not being resolved and may negatively impact your grade.

From UBC Okanagan Academic Calendar/Policies and Regulations/Academic Concession

"Students who, because of unforeseen events, are absent during the term and are unable to complete tests or other graded work, should normally discuss with their instructors how they can make up for missed work, according to **written guidelines given to them at the start of the course**. Instructors are not required to make allowance for any missed test or incomplete work that is not satisfactorily accounted for. If ill health is an issue, students are encouraged to seek attention from a health professional. Campus Health and Counselling will normally provide documentation only to students who have been seen previously at these offices for treatment or counselling specific to conditions associated with their academic difficulties. Students who feel that requests for consideration have not been dealt with fairly by their instructors may take their concerns first to the Head of the discipline, and if not resolved, to the Office of the Dean. Further information can be found at: <http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,48,0,0>.



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Common courtesy

We are experiencing a mass transition to web-oriented learning that is new to everyone, so expect norms to change. In general, please be kind to each other. When participating in group discussion, have your web cam on and mute yourself when you aren't talking. Written and oral communication, must be respectful, and free of vulgarity.

Video and online content is provided to help you learn the material, the rights to the material is retained by the University, the instructor or Mastering physics. Where material found on the website has been posted by a student, he or she may be in violation of article 4.2.2 of the [Discipline for Non-Academic Misconduct: Student Code of Conduct policy](#).

I need extra help where do I go to get it?

An essential part of learning is struggling with ideas. If you are never confused about anything in a class, you might ask yourself if you are learning anything new in that class. When you need to discuss a concept, how to approach a question, how to access online materials or how to handle the chaos of life as a university student, here are some places to turn. In this class we have several options. I will be present in my 'office' online during my office hour, and during that time I strongly encourage you to come and discuss any questions that you have. There are no "dumb questions"! If you have a question that's bothering you, there are likely 20 other people asking the same question who haven't yet come forward to ask. I am here to help you learn and want you to succeed, and I will generally try to ask you questions that will lead you to discover the answer to the question that you are answering, or help you discover the resources you can use to discover the answers yourself. Students who attend office hours are more likely to feel more comfortable asking their professor to write a reference letter on their behalf. I am also happy to receive questions by email and will generally respond within one working day to emails if not sooner. If you prefer more anonymity and can wait for the muddiest point each week, this will be another opportunity, (although I do not answer most of the questions received in this manner).

Another useful starting point for help is the Learning Support Center, or the Hub. It is also found online at <https://students.ok.ubc.ca/academic-success/learning-support/math-science-centre/>. The Student Learning Hub (LIB 237) is your go-to resource for free math, science, writing, and language learning support. The Hub welcomes undergraduate students from all disciplines and year levels to access a range of supports that include **tutoring in math, sciences, languages, and writing, as well as help with study skills and learning strategies**. For more information, please visit the Hub's website (<https://students.ok.ubc.ca/student-learning-hub/>) or email learning.hub@ubc.ca.

They offer back to basics sessions on math skills, workshops on success strategies for first year students, online resources, links to counselling resources, and drop in free tutoring. Schedules will be posted on the website for specific subject area tutors, and this can also be simply a quiet place for you to study for the few of you on campus. If you do find that a "physics" tutor is unable to help with your questions don't



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give up! Some of the tutors have different physics backgrounds than others--those from engineering backgrounds generally see different types of problems and notations than we do. This course is additionally supported this year by a Supplemental Learning (SL) leader. You can learn about the Supplemental Learning program at <https://students.ok.ubc.ca/academic-success/learning-support/supplemental-learning/>. Supplemental learning starts this year on Sept. 13.

Finally, you are also encouraged to seek out classmates to discuss concepts, questions and problems with the material. Teaching someone how to approach a problem allows you the opportunity to learn that material from many different angles, and in greater depth, broadening your knowledge. Learning from a peer helps you to understand how someone with a background similar to you thinks about the ideas that we are discussing.

Official Policies

Grading Practices

Faculties, departments, and schools reserve the right to scale grades in order to maintain equity among sections and conformity to University, faculty, department, or school norms. Students should therefore note that an unofficial grade given by an instructor might be changed by the faculty, department, or school. Grades are not official until they appear on a student's academic record.

<http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,41,90,1014>

Final Examinations

The examination period runs from Dec. 11 to Dec. 22. Except in the case of examination clashes and hardships (three or more formal examinations scheduled within a 24-hour period) or unforeseen events, students will be permitted to apply for out-of-time final examinations only if they are representing the University, the province, or the country in a competition or performance; serving in the Canadian military; observing a religious rite; working to support themselves or their family; or caring for a family member. Unforeseen events include (but may not be limited to) the following: ill health or other personal challenges that arise during a term and changes in the requirements of an ongoing job.

Further information on **Academic Concession** can be found under **Policies and Regulation in the Okanagan Academic Calendar** <http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,48,0,0>

Academic Integrity

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic



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integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept to monitor and prevent recidivism.

A more detailed description of academic integrity, including the University's policies and procedures, may be found in the Academic Calendar at:

<http://okanagan.students.ubc.ca/calendar/index.cfm?tree=3,54,111,0>.

If you have any questions about how academic integrity applies to this course, please consult with your professor.

Cooperation vs. Cheating

Working with others on assignments is a good way to learn the material and we encourage it. However, there are limits to the degree of cooperation that we will permit. Any level of cooperation beyond what is permitted is considered cheating.

When working on assignments, you must work only with others whose understanding of the material is approximately equal to yours. In this situation, working together to find a good approach for solving a problem is cooperation; listening while someone dictates a solution is cheating. You must limit collaboration to a high-level discussion of solution strategies, and stop short of actually writing down a group answer. Anything that you hand in, whether it is a written problem or a computer program, must be written by you, from scratch, in your own words. If you base your solution on any other written solution, you are cheating. If you provide your solution for others to use, you are also cheating.

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Grievances and Complaints Procedures

A student who has a complaint related to this course should follow the procedures summarized below:

- The student should attempt to resolve the matter with the instructor first. Students may talk first to someone other than the instructor if they do not feel, for whatever reason, that they can directly approach the instructor.
- If the complaint is not resolved to the student's satisfaction, the student should email the Associate Head of Physics, Dr. Jake Bobowski at jake.bobowski@ubc.ca or the Department Head pro tem, Dr. Andrew Jirasek at andrew.jirasek@ubc.ca.

Student Service Resources

Disability Assistance

The Disability Resource Centre ensures educational equity for students with disabilities, injuries or illness. If you are disabled, have an injury or illness and require academic accommodations to meet the course objectives, visit our website for more information.

Web: <http://students.ok.ubc.ca/drc/welcome.html> **E-mail DRC at:** drc.questions@ubc.ca

Equity, Human Rights, Discrimination and Harassment

UBC Okanagan is a place where every student, staff and faculty member should be able to study and work in an environment that is free from human rights-based discrimination and harassment. If you require assistance related to an issue of equity, discrimination or harassment, please contact the Equity Office, your administrative head of unit, and/or your unit's equity representative.

UBC Okanagan Equity Advisor: ph. 250-807-9291;

E-mail: equity.ubco@ubc.ca

Web: <https://equity.ok.ubc.ca/>

Reach out and ask for help if you need it

University students often encounter setbacks from time to time that can impact academic performance. If you run into difficulties and need assistance, I encourage you to contact me by email or phone during my office hours, before or after class, or by scheduling an appointment to meet on Zoom. I will do my best to support your success during the term. This includes identifying concerns I may have about your academic progress or well-being through Early Alert. With Early Alert, faculty members can connect you with advisors who offer students support and assistance getting back on track to success. Only specialized UBC advisors are able to access any concerns I may identify, and Early Alert does not affect your academic record.

For more information about Early Alert, visit <https://facultystaff.students.ubc.ca/systems-tools/early-alert/information-students>



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Health & Wellness - UNC 337

At UBC Okanagan health services to students are provided by Health and Wellness. Nurses, physicians and counsellors provide health care and counselling related to physical health, emotional/mental health and sexual/reproductive health concerns. As well, health promotion, education and research activities are provided to the campus community. If you require assistance with your health, please contact Health and Wellness for more information or to book an appointment.

Web: www.students.ok.ubc.ca/health-wellness

Email: healthwellness.okanagan@ubc.ca

Sexual Violence Prevention and Response Office (SVPRO)

A safe and confidential place for UBC students, staff and faculty who have experienced sexual violence regardless of when or where it took place. Just want to talk? We are here to listen and help you explore your options. We can help you find a safe place to stay, explain your reporting options (UBC or police), accompany you to the hospital, or support you with academic accommodations. You have the right to choose what happens next. We support your decision, whatever you decide. Visit svpro.ok.ubc.ca or call us at 250.807.9640

Independent Investigations Office (IIO)

If you or someone you know has experienced sexual assault or some other form of sexual misconduct by a UBC community member and you want the Independent Investigations Office (IIO) at UBC to investigate, please contact the IIO. Investigations are conducted in a trauma informed, confidential and respectful manner in accordance with the principles of procedural fairness. You can report your experience directly to the IIO by calling 604-827-2060.

Web: <https://investigationoffice.ubc.ca/>

E-mail: director.of.investigations@ubc.ca

The Hub

The Student Learning Hub (LIB 237) is your go-to resource for free math, science, writing, and language learning support. The Hub welcomes undergraduate students from all disciplines and year levels to access a range of supports that include **tutoring in math, sciences, languages, and writing, as well as help with study skills and learning strategies.** **Web:** (<https://students.ok.ubc.ca/student-learning-hub/>)
Ph: 250-807-9185.

SAFEWALK - Download the UBC SAFE – Okanagan app.

Don't want to walk alone at night? Not too sure how to get somewhere on campus?

Call Safewalk at 250-807-8076 For more information: <https://security.ok.ubc.ca/safewalk/>