

# COURSE SYLLABUS



COURSE TITLE: PHYS-101: Introduction to Physics

CLASS SECTION: PHYS – 101 – B01

TERM: Winter 2023

COURSE CREDITS: 4

DELIVERY METHOD(S): Blended

Camosun College campuses are located on the traditional territories of the Ləkʷəŋən and WSÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here.

Learn more about Camosun's [Territorial Acknowledgement](#).

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For COVID-19 information please visit <https://camosun.ca/about/covid-19-updates>

*Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable explanation in advance, you will be removed from the course and the space offered to the next waitlisted student.*

## INSTRUCTOR DETAILS

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NAME: Muyang (Mike) Zhong

EMAIL: [ZhongM@Camosun.bc.ca](mailto:ZhongM@Camosun.bc.ca)

OFFICE: Fisher 346B

HOURS: Lectures are asynchronous. Labs are in person, every Tuesday 6-7:50pm at Fisher 322

OFFICE HOURS: Tuesday 3:30 to 5:20pm; Thursday 3:30 to 4:20pm; Friday 2:30 to 3:20pm; or by appointment

*As your course instructor, I endeavour to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me. Camosun College is committed to identifying and removing institutional and social barriers that prevent access and impede success.*

## CALENDAR DESCRIPTION

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This course provides a first introduction to physics. Students will examine topics involving one-dimensional kinematics, Newton's Laws, work, energy and power. Further topics include simple DC circuits, properties of waves and the Laws of Reflection and Refraction. Problem solving, analyzing graphs and lab work will be emphasized.

## PREREQUISITE(S):

One of:

- C in Pre-calculus 11; C in MATH 073; C in MATH 077; C in MATH 137; C in MATH 139

It is recommended that students who have been away from math courses for more than 5 years should consult with the Mathematics department to ensure that their math skills are at a level appropriate for this course.

### CO-REQUISITE(S):

See Pre-requisites

### EXCLUSION(S):

Not Applicable

## COURSE LEARNING OUTCOMES / OBJECTIVES

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Upon completion of this course a student will be able to:

1. Demonstrate skill in the use of S.I. base and derived units.
2. Draw graphs (by hand), determine slopes of linear graphs, linearize non-linear data, and write an equation to represent a linear graph.
3. Solve technical problems involving one-dimensional kinematics for a single particle with constant acceleration.
4. Solve technical problems involving the dynamics of a single particle in one dimension using Newton's Laws of Motion.
5. Perform vector analysis using scaled diagrams with applications to displacement and force.
6. Define the terms work, kinetic energy, gravitational potential energy and power.
7. Solve technical problems using the work-kinetic energy theorem and conservation of mechanical energy.
8. Solve technical problems involving simple DC electric circuits, Ohm's Law, and electric power.
9. Define and describe the following properties of waves: period, frequency, wave speed and amplitude.
10. Define the properties of light, including the electromagnetic spectrum.
11. State and apply the Law of Reflection and the Law of Refraction.
12. Assemble simple experimental apparatus using written instructions.
13. Observe, record, organize and display experimental data in tables, graphs or charts.
14. Analyze linear graphs (determine area, slope, intercept, etc.).
15. Interpret experimental results in the context of the experimental objectives.

## REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

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### (a) Texts

- Physics 101 Course Pack (A physical copy can be purchased in the Camosun bookstore)
- Physics 101 Lab Manual ((A physical copy can be purchased in the Camosun bookstore)

### (b) Other

- Graph paper (any type will work), rulers, protractors, calculators.
- Access to a cellphone, camera or scanner capable of generating pdf documents for submission of homework, labs, and quizzes.
- Most importantly, your interest in the discovery of nature and hard work.

## COURSE SCHEDULE, TOPICS, AND ASSOCIATED PREPARATION / ACTIVITY / EVALUATION

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The following schedule and course components are subject to change with reasonable advance notice, as deemed appropriate by the instructor.

WEEK or DATE RANGE	ACTIVITY or TOPIC	OTHER NOTES
1	Chapter 1 Measurement and Units	
2	Chapter 2 Graphing	
3	Chapter 3 Kinematics 1D	
4	Chapter 3 Kinematics 1D	Test 1 (Ch1&Ch2)
5	Chapter 3 Kinematics 1D	
6	Chapter 4 Dynamics 1D	
7	Reading break	
8	Chapter 4 Dynamics 1D / Chapter 5 Work and Energy	Test 2 (Ch3)
9	Chapter 5 Work and Energy	
10	Chapter 5 Work and Energy/ Chapter 6 Waves	
11	Chapter 7 Optics	Test 3 (Ch4&5)
12	Chapter 8 Electricity	
13	Chapter 6 & 7 Review	Test 4 (Ch6&7)
14	Review	
15	Final Exam	

Students registered with the Centre for Accessible Learning (CAL) who complete quizzes, tests, and exams with academic accommodations have booking procedures and deadlines with CAL where advanced notice is required. Deadlines can be reviewed on the [CAL exams page](http://camosun.ca/services/accessible-learning/exams.html). <http://camosun.ca/services/accessible-learning/exams.html>

## EVALUATION OF LEARNING

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DESCRIPTION	WEIGHTING
4 Term tests (one drop test)	30%
Quizzes	10%
Homework	5%

DESCRIPTION	WEIGHTING
Lab (one drop lab)	30%
Final Exam	25%
<b>TOTAL</b>	<b>100%</b>

If you have a concern about a grade you have received for an evaluation, please come and see me as soon as possible. Refer to the [Grade Review and Appeals](http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf) policy for more information.  
<http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf>

## COURSE GUIDELINES & EXPECTATIONS

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This course will be delivered in a blended fashion with all the lectures pre-recorded (meaning that you can access and engage with course content at a time of your choosing) and the weekly labs are in person at Lansdowne campus. There will be a checklist provided to you each week to help you stay on track.

You are required to show up **on the first Tuesday (January 10<sup>th</sup>) of the class at 6pm** to get familiar with the course outline, your instructor and your fellow classmates. Attendance will be taken during the class. **If you are to miss the class and do not provide a reasonable explanation to the instructor prior, your seat in the course will be offered to the next person on the waitlist.**

You are encouraged to work through the videos and take notes as if you were participating in a lecture and pausing videos to work on problems yourselves. The time commitment to work through the asynchronous lectures/videos, plus doing required homework/quizzes etc., is estimated to take approximately 12-15 hours a week, just as it would in a regular face-to-face term.

There are four (4) tests throughout the term. They are all scheduled during the lab hours (Tuesday evenings). More details of the tests will be announced later in the course.

Final exam will be scheduled after April 17. More information will be available later.

## SCHOOL OR DEPARTMENTAL INFORMATION

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### PHYSICS DEPARTMENT GUIDELINES REGARDING TESTING AND GRADING:

- The final exam will cover the entire course and must be submitted before the deadline prescribed by the College. Exceptions will only be considered due to emergency circumstances as outlined in the calendar. Holidays or scheduled flights are not considered to be emergencies.
- Students must write and submit quizzes, midterm tests, etc., on the date and time assigned by the instructor. Missed exams normally receive a zero grade. Instructors are not required to provide make-up tests. At their discretion, instructors may waive a test in exceptional circumstances such as medical issues or a documented illness. **Should any exceptional circumstances and/or emergency happen, contact your instructor *prior* to the tests.**
- Any outstanding homework/quizzes or labs must be submitted prior to the last day of classes, and will be graded according to the late policy outlined by the instructor.

### PHYSICS DEPARTMENT GUIDELINES REGARDING LABS:

- Students must obtain an overall grade of 50% or higher in the laboratory component of the course order to obtain credit for the course.
- Unless otherwise stated by your instructor late penalties are as follows: For overdue labs (or quizzes), a late penalty of 10% marks off per day will be applied for the first five days following the due date. After this date a complete report is still required and earns a maximum mark of 50%.
- At the discretion of the instructor, a student who is repeating this Physics course with a laboratory grade of 70% or higher may apply for lab exemption.

### Academic Integrity

- Students in this course are subject to the Camosun College Academic Integrity Policy available at the link below and mirrored on the D2L website

<http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.pdf>

- You should read the above document thoroughly by the end of the first week of classes and be familiar with what constitutes academic misconduct. Failure to read this document or this course outline is not considered a valid excuse if you are found to have committed academic misconduct!
- You may also wish to consult the supporting documents on the Process for Documenting and Addressing Academic Misconduct as well as the Guide to Academic Misconduct and How to Address It.

<http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.1.pdf>

<http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.5.pdf>

- The Academic Integrity Policy and Supporting Documents provide examples of academic dishonesty. Some common examples include:

- o Communicating with classmates or other individuals during tests and quizzes
- o Posting homework, quiz, lab or test material to homework helper sites such as Chegg, Slader, CourseHero, etc...
- o Direct copying from any resources without approval of the instructor (including, but not limited to your classmates' work, online non-D2L resources, lab manual instructions, and an instructor's own posted solutions)
- o Having an individual (classmate, friend, professional tutor) complete work on your behalf
- o Sharing detailed information about tests, quizzes or assignments with students who have not yet taken the test or completed the assignment (In this case, all participating students will be penalized)
- o Copying data taken by another student in an individual lab exercise, or sharing your own data with other students.

o Submission of any work that is not your own.

**All students found to have committed any form of academic misconduct will be assigned an appropriate consequence as outlined in the Academic Integrity Policy.**

- Please note that student academic misconduct is documented and kept on record in the Office of the Registrar. Repeated breaches of academic integrity within this course or across courses can lead to more significant consequences per the policy and its supporting documents.
- Students are encouraged to engage with the instructor to discuss any concerns around academic integrity or violations thereof. Should a student and the instructor disagree as to the outcome of a misconduct allegation, then the student may reach out to the department Chair for support.
- I encourage you to reach out to me if you have any questions about academic integrity. You are welcome to consult with other students in working through homework problems and labs, but ultimately your final submitted work must be your own.

#### STUDENT RESPONSIBILITY

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Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

#### SUPPORTS AND SERVICES FOR STUDENTS

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Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit <http://camosun.ca/students/>.

Academic Advising	<a href="http://camosun.ca/advising">http://camosun.ca/advising</a>
Accessible Learning	<a href="http://camosun.ca/accessible-learning">http://camosun.ca/accessible-learning</a>
Counselling	<a href="http://camosun.ca/counselling">http://camosun.ca/counselling</a>
Career Services	<a href="http://camosun.ca/coop">http://camosun.ca/coop</a>
Financial Aid and Awards	<a href="http://camosun.ca/financialaid">http://camosun.ca/financialaid</a>
Help Centres (Math/English/Science)	<a href="http://camosun.ca/help-centres">http://camosun.ca/help-centres</a>
Indigenous Student Support	<a href="http://camosun.ca/indigenous">http://camosun.ca/indigenous</a>
International Student Support	<a href="http://camosun.ca/international/">http://camosun.ca/international/</a>

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Learning Skills	<a href="http://camosun.ca/learningskills">http://camosun.ca/learningskills</a>
Library	<a href="http://camosun.ca/services/library/">http://camosun.ca/services/library/</a>
Office of Student Support	<a href="http://camosun.ca/oss">http://camosun.ca/oss</a>
Ombudsperson	<a href="http://camosun.ca/ombuds">http://camosun.ca/ombuds</a>
Registration	<a href="http://camosun.ca/registration">http://camosun.ca/registration</a>
Technology Support	<a href="http://camosun.ca/its">http://camosun.ca/its</a>
Writing Centre	<a href="http://camosun.ca/writing-centre">http://camosun.ca/writing-centre</a>

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If you have a mental health concern, please contact Counselling to arrange an appointment as soon as possible. Counselling sessions are available at both campuses during business hours. If you need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

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## COLLEGE-WIDE POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

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### Academic Accommodations for Students with Disabilities

The College is committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, depression, learning, etc). If you have a disability, the [Centre for Accessible Learning](#) (CAL) can help you document your needs, and where disability-related barriers to access in your courses exist, create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate academic accommodations you need without disclosing your diagnosis or condition to course instructors. Please visit the CAL website for contacts and to learn how to get started:

<http://camosun.ca/services/accessible-learning/>

### Academic Integrity

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.pdf> for policy regarding academic expectations and details for addressing and resolving matters of academic misconduct.

### Academic Progress

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

### Course Withdrawals Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <http://camosun.ca/learn/fees/#deadlines>.

### Grading Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for further details about grading.

### Grade Review and Appeals

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

### Mandatory Attendance for First Class Meeting of Each Course

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable reason in advance, you will be removed from the course and the space offered to the next waitlisted student. For more information, please see the “Attendance” section under “Registration Policies and Procedures” (<http://camosun.ca/learn/calendar/current/procedures.html>) and the Grading Policy at <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>.

### Medical / Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.

### Sexual Violence and Misconduct

Camosun is committed to creating a campus culture of safety, respect, and consent. Camosun’s Office of Student Support is responsible for offering support to students impacted by sexual violence. Regardless of when or where the sexual violence or misconduct occurred, students can access support at Camosun. The Office of Student Support will make sure students have a safe and private place to talk and will help them understand what supports are available and their options for next steps. The Office of Student Support respects a student’s right to choose what is right for them. For more information see Camosun’s Sexualized Violence and Misconduct Policy: <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.9.pdf> and [camosun.ca/sexual-violence](http://camosun.ca/sexual-violence). To contact the Office of Student Support: [oss@camosun.ca](mailto:oss@camosun.ca) or by phone: 250-370-3046 or 250-3703841

### Student Misconduct (Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College’s Student Misconduct Policy at <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf> to understand the College’s expectations of academic integrity and student behavioural conduct.

**Changes to this syllabus:** Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.