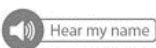


University Physics I

Physics 1007A

Course Instructor: Andrew Robinson



How to address me: Andrew

Gender Pronouns: (he/him/his) ([learn more](#))

Email: andrew.robinson@Carleton.ca

Note: If you have a question or would like to talk with me, you can send an email or visit me during student hours (see below).

Phone: N/A

Student Hours: TBA

What are 'Student Hours'?

Student hours are dedicated times through the week for the course instructor and TAs to meet with YOU. Pop in to introduce yourself, ask questions about the course, or discuss content from the course.

Note: If these times don't work for you, email me and we can arrange an alternate time to meet.

Office Location: Online

Class Location:

Class Times: Monday and Wednesday, 2.35 pm – 5.35 pm

Prerequisites: See this outline.

Physics PHYS 1007 Laboratory, Summer 2025

Location:

Lab Supervisor:

Dr. I.D. Ivanovic, igor@physics.carleton.ca

Welcome to Physics 1007A!

This is the first part of a two-term physics course with an emphasis on essentials for scientists in other disciplines. This first part of the course covers the basic laws of physics, such as Motion, Force, Newton's Laws of Motion, Energy, Rotational Motion, Collisions, Fluids and Heat Transfer. Applications to other scientific disciplines and real-world examples will be used whenever possible.

The lectures will be held in-person. The laboratory components of the course, and all other course elements will be in-person. This course is **not** suitable to take as an online student.

The course is specifically designed to teach Physics to anyone with a general science background, and knowledge of a modest amount of mathematics (algebra and trigonometry). We go through everything from first principles. No prior knowledge of physics is required.

Course level learning objectives:

1. – Mathematical skills including significant figures and trigonometry for vectors
2. – Analytical skills to determine which physical principles are applicable
3. – A sound knowledge base of basic physical principles
4. – Applications of physics in everyday applications, clinical settings and other scientific disciplines

Inclusive teaching statement:

I am committed to fostering an environment for learning that is inclusive for everyone regardless of gender identity, gender expression, sex, sexual orientation, race, ethnicity, ability, age, class, etc. Please email me if you have any comments or concerns.

Prerequisites

Prerequisite(s): (i) Grade 12 Mathematics: Advanced Functions or equivalent, or [MATH 0107](#) (may be taken concurrently); or (ii) Grade 12 Mathematics: Calculus and Vectors or equivalent, or [MATH 1007](#) (may be taken concurrently); or (iii) permission of the Physics Department.

Land Acknowledgement

We recognize the Algonquin peoples as the traditional custodians of the land in which the campus is located, and where the class is taught. We give respect to the host nation, the *Kitchissippi Omàmiwininì Anishinabeg* (Algonquin peoples of the big river, in the Algonquin language).

Community Guidelines

The following values are fundamental to academic integrity and are adapted from the International Center for Academic Integrity*. In our course, we will seek to behave with these values in mind:

	As students, we will...	As a teaching team, we will...
Honesty	<ul style="list-style-type: none"> Honestly demonstrate our knowledge and abilities on assignments and exams Communicate openly without using deception, including citing appropriate sources 	<ul style="list-style-type: none"> Give you honest feedback on your demonstration of knowledge and abilities on assignments and exams Communicate openly and honestly about the expectations and standards of the course through the syllabus, and with respect to assignments and exams
Responsibility	<ul style="list-style-type: none"> Complete assignments on time and in full preparation for class Show up to class on time, and be mentally/physically present Participate fully and contribute to team learning and activities 	<ul style="list-style-type: none"> Give you timely feedback on your assignments and exams Show up to class on time, and be mentally & physically present Create relevant assessments and class activities
Respect	<ul style="list-style-type: none"> Speak openly with one another, while respecting diverse viewpoints and perspectives Provide sufficient space for others to voice their ideas 	<ul style="list-style-type: none"> Respect your perspectives even while we challenge you to think more deeply and critically Help facilitate respectful exchange of ideas
Fairness	<ul style="list-style-type: none"> Contribute fully and equally to collaborative work, so that we are not freeloading from others Not seek unfair advantage over fellow students in the course 	<ul style="list-style-type: none"> Create fair assignments and exams, and grade them in a fair, and timely manner Treat all students equitably
Trust	<ul style="list-style-type: none"> Not engage in personal affairs while on class time Be open and transparent about what we are doing in class Not distribute course materials to others without authorization 	<ul style="list-style-type: none"> Be available to all students when we say we will be Follow through on our promises Not modify the expectations or standards without communicating with everyone in the course
Courage	<ul style="list-style-type: none"> Say or do something when we see actions that undermine any of the above values Accept a lower or failing grade or other consequences of upholding and protecting the above values 	<ul style="list-style-type: none"> Say or do something when we see actions that undermine any of the above values Accept the consequences (e.g., lower teaching evaluations) of upholding and protecting the above values

Learning Materials

Textbook:

Physics, Fifth Edition, Alan Giambattista, McGraw Ryerson Ltd., ISBN: 9781260570052

Can be bought at <https://carleton.ca/thecampusstore/>

The textbook is quite expensive, and if you can find a second-hand one, do so. We are not using the publisher's website, so you do not need any online codes. Earlier editions of the textbook can also be found online at much lower cost, and you are welcome to use this option. Approximate cost in Fall 2024 retailed at \$117.50. You can rent the eBook for 180 days for \$69.00.

Assessment in this Course

Research about learning strongly suggests that the most important factor in learning is doing the work of reading, writing, recalling, practicing, synthesizing, and analyzing. Learning happens best when people actively engage material on a consistent basis, and that is why we have high standards in this course. We are confident that, with appropriate effort, you **all** can meet those standards.

We also try to reduce unintentional bias in grading by, for example and when possible, grading assignments one question at a time (grading all of question 1 before grading any of question 2), grading anonymously, and using rubrics.

Grade Breakdown

Component	Grade Value
Online Quizzes (Best 5 of 6)	20%
Written Assignments (Best 4 of 5)	25%
LABORATORY (Best 4 out of 5)	30%
Final Exam	25%

Course Organisation

The lecture material is delivered in person, with lectures on Mondays and Wednesdays. The lecture notes will be posted in advance, and the lectures will be recorded. These links are posted on Brightspace. In addition, I will hold frequent student hours on Zoom at times to be determined (I will ask in class about your schedules). These will be times when I will briefly review the most essential concepts from the week's material, go over some worked problems on the Zoom whiteboard, and answer your questions. These sessions are not mandatory but are designed to allow you to interact with me and discuss problems. If you cannot attend Student Hours at the regular times, then you can email me with queries, and if necessary, we can set up individual Zoom sessions at mutually convenient times.

I am available to discuss any issues with work, mental and physical health and other factors which might impact your performance on the course. We recognise that in an intensive course such as this, we need to accommodate outside events, and we will gladly do so on request. Please do not worry about asking for deadline extensions to academic work. These will come up, and we will help.

Laboratory

The laboratory is divided into two sections, which meet at different times of the week. Please consult the Laboratory Policy document, and the Laboratory Brightspace website for more details. The laboratory is situated in the Herzberg Building. For all questions regarding the laboratory, please contact the lab supervisor, Dr. Ivanovic.

Section	Lab time	Supervisor
A1	Tuesday 1305-1555	Dr. I.D. Ivanovic
A2	Thursday 0835-1125	Dr. I.D. Ivanovic

Weekly Online Quizzes

There are 6 weekly online quizzes in the course. The quizzes will be multiple choice and completed on Brightspace. You will have three attempts. Questions are randomized from a question bank pool, so they will be different in each attempt. Quizzes are always due on Mondays at 2359h, except for the Victoria Day public holiday, when it is due on the Tuesday.

Weekly Written Assignments

In weeks 1 to 5 there will be a weekly assignment to upload. The questions are asked in a Brightspace Quiz, where you enter the numerical answer. In addition, you create a PDF file of your solution, and upload this at the provided link. Each question is worth five marks. One mark is for the numerical answer, and the other four are for the quality of your written solution. Written assignments are always due on Thursdays by 2359.

Course Schedule

Week	Date	Lecture	Topic	Textbook Sections	Lab	Written Assignments
1	5th May	1	What is Physics? Motion in One Dimension	2.1-2.5	No Labs	
	7th May	2	Motion in Two Dimensions	3.1, 3.2, 3.3, 3.4, 3.5		
2	12th May	3	Newton's Laws of Motion	4.1, 4.2, 4.3, 4.4, 4.5	Reaction Time	WA 1 due Thursday 15th
	14th May	4	Force	4.6, 4.7, 4.8		
3	19th May	Victoria Day	No lecture		Density	WA 2 due Thursday 22nd
	21st May	5	Work and Energy	6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8		
4	26th May	6	Linear Momentum and Collisions	7.1, 7.2, 7.3, 7.4, 8.1, 8.2, 8.3	Atwood's Machine	WA 3 due Thursday 29th
	28th May	7	Rotational Motion	Chapter 5.1, 5.2, 8		
5	2nd June	8	Oscillations	Chapter 10	Spring Constant	WA 4 due Thursday 5th
	4th June	9	Waves and Sound	Chapter 11		
6	9th June	10	Static Fluids	Chapter 9	Simple Pendulum	WA 5 due Thursday 12 th
	11th June	11	Flowing Fluids	Chapter 9		
7	16th June	12	Heat and Thermodynamics	13.1, 13.2, 13.3, 14.1, 14.2, 14.3		

Final Exams

The final exam will take place **online** during the final exam period and the date will be set in due course. The date is not in my control, and we need to wait for the Exam Services office to set it. Please do not make travel arrangements until we know when the final exam will be held. I normally set an exam to be a two-hour test, taken anytime within a 24-hour period.

Looking for help preparing for exams? Student Academic Success Services (SASS) at Carleton offers course-targeted study groups and supports and the Science Student Success Centre (SSSC) provides help with study skills.

Statement on Chat GPT/Generative AI usage in this Course

AI Use in this course: Students may use AI tools for basic word processing and formatting functions, including:

- Grammar and spell checking (e.g., Grammarly, Microsoft Word Editor)
- Basic formatting and design suggestions (e.g., Microsoft Word's formatting tools, PowerPoint Design editor)

Documenting AI Use: It is not necessary to document the use of AI for the permitted purposes listed above. If you have questions about a specific use of AI that isn't listed above, please consult your instructor.

Why have we adopted this policy? This policy ensures that student voices and ideas are prioritized and authentically represented, maintaining the integrity of the work produced by students while allowing basic support to enhance clarity, correctness, layout, and flow of ideas. The goal of adopting a limited use of AI is to help students develop foundational skills in writing and critical thinking by practicing substantive content creation without the support of AI.

Note About Physical & Mental Health

If you are feeling unwell, please do not attend class or labs in person. We will run make-up labs at the end of the session if you miss them. Lectures will be recorded, so you can view them online. We can also be flexible about quiz and assignment deadlines.

If you are struggling, please do not hesitate to reach out. I am happy to listen, and/or direct you to resources that might help. In terms of class, if you need extra help or missed a lesson, please do not worry. Email me and we will set a time to meet. I'll work with you, I promise. Remember that Carleton also offers an array of mental health and well-being resources, which can be found [here](#).

University Policies

In accordance with the Carleton University Undergraduate Calendar Regulations, the letter grades assigned in this course will have the following percentage equivalents:

A+ = 90-100	B+ = 77-79	C+ = 67-69	D+ = 57-59
A = 85-89	B = 73-76	C = 63-66	D = 53-56
A- = 80-84	B- = 70-72	C- = 60-62	D- = 50-52

F = <50

WDN = Withdrawn from the course

DEF = Deferred

Academic Accommodations, Regulations, Plagiarism, Etc.

Carleton is committed to providing academic accessibility for all individuals. You may need special arrangements to meet your academic obligations during the term. The accommodation request processes are outlined on the Academic Accommodations website:

<https://students.carleton.ca/course-outline/>

- **Deferred/missed term work for short-term accommodation (5 days or less):** Email your instructor.
- **Deferred/missed term work for longer term incapacitation (5 days or longer):** If you require accommodations for this course that are longer than the 5-day (short-term) period, please email your instructor to discuss how/whether accommodation needs could be met for this course.
- **Paul Menton Centre for Students:** The Paul Menton Centre (PMC) is the designated department at Carleton University coordinating disability services on campus.

<https://carleton.ca/pmc/>

Academic Integrity

Academic Integrity is upholding the values of honesty, trust, respect, fairness, responsibility, and courage that are fundamental to the educational experience. Carleton University provides supports such as academic integrity workshops to ensure, as far as possible, that all students understand the norms and standards of academic integrity that

we expect you to uphold. Your teaching team has a responsibility to ensure that their application of the Academic Integrity Policy upholds the university's collective commitments to fairness, equity, and integrity.

(Adapted from [Carleton University's Academic Integrity Policy](#), 2021).

Examples of actions that do not adhere to Carleton's Academic Integrity Policy include:

- Plagiarism
- Accessing unauthorized sites for assignments or tests
- Unauthorized collaboration on assignment and exams
- Using artificial intelligence tools such as ChatGPT when your assessment instructions say that it is not permitted

Please review the checklist [linked here](#) to ensure you understand your responsibilities as a student with respect to academic integrity and this course.

Sanctions for Not Abiding by Carleton's Academic Integrity Policy

A student who has not upheld their responsibilities under Carleton's Academic Integrity Policy may be subject to one of several sanctions. A list of standard sanctions in science can be found [here](#).

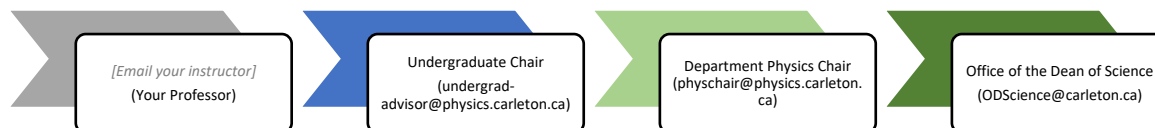
Additional details about this process can be found on [the Faculty of Science Academic Integrity website](#). Students are expected to familiarize themselves with and follow the Carleton University [Student Academic Integrity Policy](#). The Policy is strictly enforced and is binding on all students.

Student Rights & Responsibilities

Students are expected to act responsibly and engage respectfully with other students and members of the Carleton and the broader community. See the [7 Rights and Responsibilities Policy](#) for details regarding the expectations of non-academic behaviour of students. Those who participate with another student in the commission of an infraction of this Policy will also be held liable for their actions.

Student Concerns

If a concern arises regarding this course, **your first point of contact is your instructor:** Email or drop in during student hours and I will do my best to address your concern. If I am unable to address your concern, the next points of contact are (in this order):



Note: You can also bring your concerns to [Ombuds services](#).

Important University Dates and Deadlines

Please familiarise yourself with the Academic Calendar here:

[The Academic Year \(Graduate and Undergraduate Studies\) < Carleton University](#)

Assistance for Students

Academic and Career Development Services: <http://carleton.ca/career>

Writing Services: <http://www.carleton.ca/csas/writing-services/>

Peer Assisted Study Sessions (PASS): <https://carleton.ca/csas/group-support/pass/>

Math Tutorial Centre: <https://carleton.ca/math/math-tutorial-centre/>

Science Student Success Centre: <https://sssc.carleton.ca/>