University Physics I

Physics 1007A (Lec)

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 or 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: Mon & Wed, 2pm-3.15 pm

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

Office Location: Online

Class Location: Online

Class Times: Online

Prerequisites: See this outline.

Physics PHYS 1007 Laboratory, Summer 2022
Location: room 4160 HP
Lab Supervisors:
Dr J. Sutton, juliesutton3@cunet.carleton.ca
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.

Due to the current COVID-19 pandemic, and my particular circumstances, the lecture part of the course is online only for this summer. The lectures will be recorded and will be available at any time for asynchronous learning. The laboratory sessions will be in-person, and you should look for the separate Brightspace area for the labs.

The main course elements, lecture material, scope of the topics covered, online tests and written assignments remain unchanged from normal in-person summer course offerings.

This is the fourth time that we have given this lecture course in online format, and we have been continuously improving our lecture material, and pedagogical techniques.

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.

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	• Honestly demonstrate our knowledge and abilities on assignments and exams • Communicate openly without using deception, including citing appropriate sources	• 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	• 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	• 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	• Speak openly with one another, while respecting diverse viewpoints and perspectives • Provide sufficient space for others to voice their ideas	• Respect your perspectives even while we challenge you to think more deeply and critically • Help facilitate respectful exchange of ideas
Fairness	• 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	• Create fair assignments and exams, and grade them in a fair, and timely manner • Treat all students equitably
Trust	• 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	• 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	• 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	• 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

[2] This class statement of values is adapted from Tricia Bertram Gallant, Ph.D.

Learning Materials

Textbook:

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

Can be bought at https://www.bkstr.com/carletonstore

Technology Checklist:

- ☐ An internet-enabled computer (laptop/desktop)
- ☐ Zoom software installed on computer (can also install on phone as backup!)
- ☐ Access to reliable internet
- ☐ Webcam (optional)
- ☐ Microphone

If you do not have access to all of these, please let me know, so that we can find work arounds.

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)	25%
Written Assignments (best 4 of 5)	25%
LABORATORY (BEST 4 out of 5 Grades)	30%
Final Exam	20%

Course Organisation

The lecture material is delivered asynchronously, using short lecture video recordings. These links are posted on Brightspace. In addition, I will hold student hours on Mondays and Wednesdays from 2 – 3 pm. 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, then you can email me with queries, and if necessary, we can set up individual Zoom sessions at mutually convenient times.

In addition, 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.

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.

Weekly Assignments

In weeks 2-6, 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.

Laboratory

The laboratory will be in person for this semester, and is divided into three 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 (HP 4160)

Section	Lab time	Supervisor
A1	Tue. 1:05-3:55 PM	Dr. J. Sutton
A2	Thu. 8:35-11:25 AM	Dr. I.D. Ivanovic
A3	Wed. 8:35-11:25 PM	D. J. Sutton

Course Schedule

Week	Dates	Notes	Topics	Written Assignments	Lab Experiment	Lab Assignment
1	Thursday 5th May		Module 1 (Intro) and 2 (Skills)		*no lab*	
2	Monday 9th May		Modules 3 and 4 (1D and 2D Motion)	WA_Week_2	Reaction Time	Lab report
3	Monday 16th May		Module 5 (Force)	WA_Week_3	Density	Lab report
4	Monday 23rd May	Victoria Day holiday on 23rd	Module 6 (Work, Energy, Power)	WA_Week_4	Atwood's Machine	In-Lab writeup
5	Monday 30th May		Modules 7 (Rotational Motion) and 8 (Collisions and Momentum)	WA_Week_5	Spring Constant	In-Lab writeup
6	Monday 6th June		Modules 9 (Fluids) and 10 (Oscillations)	WA_Week_6	Simple Pendulum	In-Lab writeup
7	Monday 13th June	last day of classes Friday 17th June	Modules 11 (Waves) and 12 (Heat)		*TBD*	
8	Monday 20th June	Exam week				

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.

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.

Special Information Regarding COVID-19

This information is liable to change, as the situation, and Public Health advice evolves.

It is important to remember that COVID is still present in Ottawa. The situation can change at any time and the risks of new variants and outbreaks are very real. There are a number of actions you can take to lower your risk and the risk you pose to those around you including being vaccinated, wearing a mask, staying home when you're sick, washing your hands and maintaining proper respiratory and cough etiquette.

Feeling sick? Remaining vigilant and not attending work or school when sick or with symptoms is critically important. If you feel ill or exhibit COVID-19 symptoms do not come to class or campus. If you feel ill or exhibit symptoms while on campus or in class, please leave campus immediately. In all situations, you must follow Carleton's symptom reporting protocols.

Masks: On the recommendation of Ottawa Public Health, Carleton will be maintaining the mandatory COVID-19 Mask Policy until further notice. The policy requires masks to be worn in all university buildings, including offices, classrooms and labs.

Vaccines: Further, while proof of vaccination is no longer required as of May 1 to attend campus or in-person activity, it may become necessary for the University to bring back proof of vaccination requirements on short notice if the situation and public health advice changes. Students are strongly encouraged to get a full course of vaccination, including

booster doses as soon as they are eligible, and submit their booster dose information in cuScreen as soon as possible. Please note that Carleton cannot guarantee that it will be able to offer virtual or hybrid learning options for those who are unable to attend the campus.

All members of the Carleton community are required to follow requirements and guidelines regarding health and safety which may change from time to time. For the most recent information about Carleton's COVID-19 response and health and safety requirements please see the University's COVID-19 website and review the Frequently Asked Questions (FAQs). Should you have additional questions after reviewing, please contact covidinfo@carleton.ca.

Note About COVID-19 & Mental Health

The global pandemic has led to extra stress and uncertainty for everyone, and while we may all be experiencing the same storm, this does not mean that we are all in the same boat! 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, don't stress! 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.

Children & video sessions

You are welcome to have children with you during video sessions as I fully understand that childcare situations may be complicated for many of us at this time. Do your best to participate and engage, but also please get in touch with me if you have any questions or concerns.

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
ABS = Student absent from final exam
DEF = Deferred
FND = (Failed, no Deferred) = student could not pass even with 100% on final exam

Academic Accommodations, Regulations, Plagiarism, Etc.

Carleton University is committed to providing access to the educational experience in order to promote academic accessibility for all individuals.

Academic accommodation refers to educational practices, systems and support mechanisms designed to accommodate diversity and difference. The purpose of accommodation is to enable students to perform the essential requirements of their academic programs. At no time does academic accommodation undermine or compromise the learning objectives that are established by the academic authorities of the University. More information can be found at: https://students.carleton.ca/course-outline/

University rules regarding registration, withdrawal, appealing marks, and most anything else you might need to know can be found on the university's website, here:

https://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/

Academic Accommodations for Students with Disabilities

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet

with your instructor as soon as possible to ensure accommodation arrangements are made. For more details, visit the Paul Menton Centre website.

Addressing Human Rights Concerns

The University and all members of the University community share responsibility for ensuring that the University's educational, work and living environments are free from discrimination and harassment. Should you have concerns about harassment or discrimination relating to your age, ancestry, citizenship, colour, creed (religion), disability, ethnic origin, family status, gender expression, gender identity, marital status, place of origin, race, sex (including pregnancy), or sexual orientation, please contact the Department of Equity and Inclusive Communities at equity@carleton.ca.

Religious Obligations

Please contact me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, please review the Student Guide to Academic Accommodation (PDF, 2.1 MB).

Survivors of Sexual Violence

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and where survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: https://carleton.ca/sexual-violence-support/

Accommodations for Missed Work

Carleton recognizes that these are unprecedented times during the COVID-19 pandemic, and that students may be experiencing greater stress and other life factors that are not in their control. As a result, Carleton has put into place a protocol for students to apply for accommodations using a self-declaration form in the event of missed work. The form can be found at: https://carleton.ca/registrar/wp-content/uploads/self-declaration.pdf

For Pregnancy

Please contact me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, please review the Student Guide to Academic Accommodation (PDF, 2.1 MB).

Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, see the Senate Policy on Accommodation for Student Activities (PDF, 25KB).

Academic Integrity

Academic misconduct undermines the values of honesty, trust, respect, fairness, and responsibility that we expect in this class. 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

Sanctions for not abiding by Carleton's Academic Integrity Policy

A student who has not adhered to Carleton's Academic Integrity Policy may be subject to one of several sanctions:

1. If you take full responsibility for your actions, and it is the first time you have violated the policy, you will receive zero on the assessment. If you are found to have violated the policy but do not take responsibility, an additional grade deduction will be applied (e.g. an A- will become a B+)
2. Subsequent violations of the policy may result in more severe sanctions such as failing the course, suspension from all studies and/or expulsion.

Process of an Academic Misconduct Investigation

Step 1: The instructor believes misconduct has occurred and submits documentation to the Dean of the Faculty of Science.

Step 2: The Dean reviews documentation and can proceed with or dismiss the allegation.

Step 3: If sufficient evidence, the student receives an allegation statement by email. Ombuds services is copied on the email.

Step 4: The student provides a written response to the evidence provided.

Step 5: Either party may request a meeting between student, dean, and the ombudsperson.

Step 6: Dean informs the student of the decision.

Appeal: Student has the right to appeal the decision.

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.

Plagiarism

Plagiarism is the passing off of someone else's work as your own and is a serious academic offence. For the details of what constitutes plagiarism, refer the Faculty of Science Academic Integrity website. To further understand Academic Integrity, consider attending the Learning and Support Academic Integrity Workshop.

What are the Penalties for Plagiarism?

A student found to have plagiarized an assignment may be subject to one of several penalties including: expulsion; suspension from all studies at Carleton; suspension from full-time studies; and/or a reprimand; a refusal of permission to continue or to register in a specific degree program; academic probation; award of an FNS, Fail, or an ABS.

What are the Procedures?

3. All allegations of plagiarism are reported to the Dean of Faculty of Science. Documentation is prepared by instructors and/or departmental chairs.
4. The Dean writes to the student and the University Ombudsperson about the alleged plagiarism.
5. The Dean reviews the allegation. If it is not resolved at this level then it is referred to a tribunal appointed by the Senate.

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.

Assistance for Students

Academic and Career Development Services: http://carleton.ca/sacds/

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/