

Elementary University Physics II

PHYS 1008A/PHYS 1008B

Winter 2022

Course Outline

1. Course calendar description and pre-requisites

This is the second part of a two-term physics course with an emphasis on essentials for scientists in other disciplines. This second part of the course covers Electricity and Magnetism, DC and AC circuits, properties of Electromagnetic radiation and light, optics, elementary quantum physics with introductory concepts of atomic, nuclear, and sub-atomic particles. Applications to other scientific disciplines particularly in the life sciences and real-world examples will be used whenever possible. Precludes additional credit for BIT 1003 (no longer offered), [BIT 1007](#), [BIT 1204](#), [PHYS 1002](#), [PHYS 1004](#).

Pre-requisites: [PHYS 1001](#) or [PHYS 1003](#) or [PHYS 1007](#). Students in this course must have PHYS 1007 or equivalent and are expected to have completed MATH 0107 or MATH 1007 or their equivalent. Otherwise you must obtain permission of the Physics Department. *If you have failed Physics 1007 in the 2021 Fall term, you must leave the course.*

2. Instructors contact information

Instructor office hours will be posted on BrightSpace

Tong Xu	PHYS 1008A lecturer/coordinator	txu@physics.carleton.ca
Mustafa Bahran	PHYS 1008B lecturer	Mustafa.Bahran@carleton.ca
Tamara Rozina	Lab Supervisor	tamara.rozina@carleton.ca

In accordance with University policy, all communication with instructors and TAs must be via your Carleton email account. To get your Carleton Email you will need to activate

your MyCarletonOne account through Carleton Central. Once you have activated your MyCarletonOne account, log into the MyCarleton Portal.

To help resolve issues related to any missing term work, students must save all of their email correspondence with instructors and TAs until the course grades are finalized.

3. Course textbook

'Physics', Fifth Edition (International Student Edition), Giambattista, McGraw Ryerson Ltd,
ISBN: 9781260570052 (hardcover), 9781260486964 (e-text), 9781260327762 (hardcover + e-text)

These can be purchased from the Carleton University Bookstore in the University Centre (<https://www.bkstr.com/carletonstore>)

The previous version of the textbook (3rd edition, ISBN 9780073512150) is also sufficient. We will not be using the Publisher's website for assignments, so no access code is required. Please note that the equation numbering in the 3rd edition is different than the current edition used.

4. Course website

The course outline and other course information will be posted on BrightSpace. We reserve the right to amend the course outline on BrightSpace and will inform you if that version changes. In the event of any discrepancy between this document, and the version currently posted on the website, then the website version on BrightSpace will be taken as the definitive version.

If you are unable to access BrightSpace or need help with your computing account, please contact the ITS Service Desk at 613-520-3700 or email: its.service.desk@carleton.ca

5. Course modality

This course is an online course where there are a series of synchronous meetings (lectures, tutorials, and labs). In addition, an asynchronous activity is available (posted recorded lectures). Students need to be prepared to meet online via web conferencing tools at scheduled days and times. The specific dates and activities are described further on in this course outline. The asynchronous activities are intended to provide flexibility to students in the event it is not possible to attend the lecture in real time. Students are expected to remain up to date with the deadlines and due dates provided by the instructor. These courses require reliable high-speed Internet access and a computer.

6. Lecture schedule *

Section	Time Slot	Platform
PHYS 1008A	Mondays and Wednesdays 13:05 - 14:25	Via BBB link on Dr. Xu's section of BrightSpace
PHYS 1008B	Wednesdays and Fridays 08:35 - 09:55	Via Zoom link on Dr. Bahran's section of BrightSpace

* All timeslots are in the Eastern Time zone

Web conferencing sessions in this course may be recorded and made available only to those within the class. Please attend the Zoom meeting with your regular name displayed. Unrecognized names not in the class list will not be allowed to join. Sessions may be recorded to enable access to students with internet connectivity problems, who are based in different time zone, and/or who have conflicting commitments. If students wish not to be recorded, they need to leave their camera and microphone turned off.

You will be notified at the start of the session when the recording will start.

Please note that recordings are protected by copyright. The recordings are for your own educational use, but you are not permitted to publish to third party sites, such as social media sites and course materials sites.

7. Labs

Labs start the week of **January 17, 2022**.

Information about the labs can be found on the LAB Brightspace page:
PHYS1008L1-L7 University Physics II (LAB) [...] Winter 2022

All the sessions will be held via a BigBlueButton (BBB) virtual classroom available on that page.

Information on using BBB can be found at:

<https://carleton.ca/brightspace/students/participating-in-bigbluebutton/>

It is imperative that all students attend the first lab. You may attend only the section that you are registered in. All changes (exemptions, etc.) must be arranged with the Lab Supervisor, Ms. Tamara Rozina. Students who might be exempt from the Lab (if they are repeating the course, for example) must contact the Lab Supervisor.

Lab section	Time slot
L1	Thursdays 08:35 – 11:25
L2	Thursdays 13:05-15:55
L3	Fridays 08:35 - 11:25
L4	Wednesdays 08:35 - 11:25
L5	Tuesdays 08:35 – 11:25
L6	Tuesdays 13:05 - 15:55
L7	Wednesdays 13:05 - 15:55

If you are repeating PHYS 1008 and have passed the lab portion in your previous attempt, you are **not** automatically given a lab exemption - you must apply for it no later than **January 21, 2022**. Lab exemptions will be considered on a case-by-case basis at the discretion of the Lab Supervisor.

The grade for every lab will be based on a **report**. All reports count toward your total lab grade for the course. **No grade will be dropped.**

All reports must be submitted by the appointed time: **1 week** after the start of the lab session for each experiment. The penalty for a late lab report is **20% up to the End Date** specified on Brightspace for every lab section report submission. It is the student's responsibility to check when the End Date is for each report. **No reports will be accepted for grading past their End Date.**

If you miss a lab, contact Ms. Rozina immediately.

8. Lab Schedule

Lab #	Title	Weight (%)	Week of
1	DC Circuits and Resistance	10	January 17, 2022
2	Properties of Charge Carriers	15	January 31, 2022
3	Properties of Light	25	February 14, 2022
4	Simple Lenses	25	March 7, 2022
5	Photoelectric Effect	25	March 21, 2022

9. Tutorials

There will be a tutorial on each alternating week with the labs (see lab and tutorial schedule below). All the sessions will be held via a BigBlueButton (BBB) session available on the BrightSpace Lab page.

The structure of the tutorial is as follows:

A set of tutorial problems will be posted on BrightSpace at least a week before the tutorial session. Students should attempt to solve these problems in order to prepare for the tutorial. At the start of the tutorial session students will individually complete a multiple-choice (MC) quiz consisting of 4 questions. **The MC quizzes are open book and designed for a 15-minute completion time. However, 30 minutes are given.** Next, the TAs will demonstrate solving example problems and answering questions about the tutorial problem set. The last hour of the tutorial will be an open-book tutorial test consisting of two long-answer problems. **Open book means that you can use your notes, textbook, the formula sheet, and a scientific calculator. No other aids are permitted.**

The grade for the tutorial test and the multiple-choice quiz will be combined to provide the final Tutorial Test grade for each of the 5 tutorial sessions this semester. The 4 highest test grades will be used to determine the final Tutorial Test score.

Note that if you are late for the tutorial, you will miss the multiple-choice quiz, and forfeit marks. There are no retakes possible.

Students must normally attend the tutorial only in the lab section to which they belong. To be able to attend a different section, students must obtain permission from the lab coordinator (tamara.rozina@carleton.ca). Such permission will usually be granted only for emergencies or medical reasons. So, if you cannot attend your own lab section one week due to e.g. medical reasons, let us know AS SOON AS POSSIBLE so that you can be rescheduled to a different section.

Lab and Tutorial schedule

Week of	Lab/Tutorial
January 10, 2022	NO Labs/Tutorials
January 17, 2022	DC Circuits
January 24, 2022	Tutorial 1
January 31, 2022	Properties of Charge Carriers

February 7, 2022	Tutorial 2
February 14, 2022	Properties of Light
February 21, 2022	Winter Break
February 28, 2022	Tutorial 3
March 7, 2022	Simple Lenses
March 14, 2022	Tutorial 4
March 21, 2022	Photoelectric Effect
March 28, 2022	Tutorial 5
April 4, 2022	Review
Week of	Lab/Tutorial
January 10, 2022	NO Labs/Tutorials

10. Lectures

The lectures will be given in real time at the assigned time slots given for two sessions every week according to the schedule in Section 6 of this course outline for each assigned section. It is important that the students attend the lectures as they are given to derive the greatest benefit from the course. The actual lectures will be recorded to video and will be available online after the class is given. In addition to the lecture, each instructor will have synchronous Office hour sessions (via BigBlueButton). In Section 14 of the course outline is a schedule for the topics that will be covered each week and the corresponding lectures. Students should read the necessary chapter material prior to attending the synchronous lecture sessions.

Pre-Class Reading Quiz

Each week will contain a short "Pre-Class Reading Quiz" (RQ), to allow the student to check on their understanding of the material prior to starting the work in the chapter which means students need to scan-read the chapter prior to coming to class. **Please note that the RQ covers only the sections that will be covered in class as indicated in section 14.** There will be 12 RQs in total. Each RQ will close 1 hr prior to the lecture starting the material of a particular Chapter. Doing these RQs will count as a participation grade in the final course

grade. These quizzes are to ensure that you have read the designated chapter(s) prior to taking the class. There will only be one attempt at these RQs and all RQs less the (2) lowest quiz will count toward the final grade (time allocated will be 45 to 60 minutes). The questions will be conceptually based in general and sometimes calculations will be needed to complete an individual question. The first RQ is particularly more difficult in order to test if you are ready for the course.

Homeworks

In addition to the RQs, there are 12 weekly Homeworks (HWs) which are assignment quizzes administered through Brightspace. These HWs will count as the HW grade in the final course grade. The HWs will be based on material studied during the lectures during that week. Each HW will become available at the beginning of the week for the students to attempt. You will have 2 attempts during the week before the HW closes. All 12 HWs less the (2) lowest HWs will count toward the final grade of the HW. See the timetable for the lectures further in this document. Be vigilant and be sure to always check the due dates for the HWs. If there is any discrepancy between the marks posted in the Brightspace gradebook and your calculated values, please notify the instructor immediately.

Numerical Answers

In answering the assignment calculation questions, you will encounter the situation where you must enter a numerical value as the response. Please enter the answer when appropriate in scientific notation with the correct number of significant figures. By default, THREE sig. fig. is required, unless specified otherwise in the question. For example, if your answer is $1.60 \times 10^{-19} \text{ C}$. You will input your answer as

Your Answer:

1.60	x10	-19		C
Answer				units

You are allowed a 5% variance between your answer and the one calculated within Brightspace to account for rounding errors. If you do not give your answer with three significant figures, your answer may be outside of this 5% threshold and will therefore be marked as incorrect. Answers of this sort will not be eligible for re-assessment by the professor. In some question you will be asked to use a specific number of decimal points instead of using sig. figs. You need to abide by the stated-required digital precision.

Be sure always to take careful note of the units for your answer. [Some questions will ask you to input units of your answer, while some others will only ask for the numerical result](#) Typically, it is expected that the answer will follow SI units (m, s, J, etc.) however there are occasions in which non-standard units will be required for the specific

question. Generally, these instances will be noted in the question itself, e.g. “Express your answer in km”. Also, units are not to be entered with the numerical answer for these assignments! If required, please input the unit in the specified box.

Scientific notations in the question text

Due to the limitation of BrightSpace’s capability of displaying scientific notations, you may see the following in the questions text.

BrightSpace display in the question text	Actual value
2.50x10 ⁻⁵	2.50x10 ⁻⁵
2.50x10 ⁰ Unfortunately, BS still displays the exponent term even it is 10 to the power of zero. So just treat 10 ⁰ =1.0	2.50
(2.50x10 ⁰)x10 ² , or (2.50x10 ⁰)E2, or (2.50x10 ⁰)x10 ² Some time you may see such mixed display, again, note that 10 ⁰ =1.0.	2.50x10 ²

Scientific Calculators:

It is highly recommended that you use and understand the functionality of a reliable scientific calculator for all calculations on assignments and tests. It is good practice to fully understand how to use the scientific notation functionality that all scientific calculators will have available. This will save a great deal of time in all your calculations and greatly reduces mistakes.

11. Final Exam

There is no mid-term examination. We regard the five tutorial tests as a way of providing feedback and guidance on your performance. If you do not perform to your own satisfaction on a tutorial test, it is imperative to discuss this with your lecturer during office hours or by email. Do not leave this consultation until the end of the course. Effective intervention and assistance are best applied at the beginning of term.

The final examination will be scheduled during the regular April examination period at the end of the term. It is the responsibility of the student to be present during this period; in particular, holiday travel arrangements must not be made before the examination schedule is known.

The final exam may include questions related to material contained within the lab portion of the course.

Please note that tests and examinations in this course will use a remote proctoring service provided by Scheduling and Examination Services.

You can find more information at <https://carleton.ca/ses/e-proctoring/>

Students must adhere to the rules and requirements of the e-proctoring process as spelled out by Carleton and the course instructor prior to the exam date.

12. Marking Scheme

HWs (Assignment Quizzes) (best 10 out of 12)	20%
Tutorials (best 4 out of 5)	20%
Labs (5)	30%
Pre-Calss Chapter Reading Quizzes (best 10 out of 12)	10%
Final Exam	20%
Total	100%

if you miss a lab or homework for a reason that justified for accommodation, you need to let your instructor, or the lab supervisor know within 1 week from the deadline of the missing work. or you receive Zero mark for that missing work.

Extra credit group projects

There will be 5 bonus group study projects each worth 1% each. These projects promote deeper understanding of the material. The bonus projects must be done as groups of 2-4 people to also promote collaboration. The group need to meet either online or in-person, following ([public health guidelines](#)). A proof of group meeting is required: photo, or screen shot (with camera on). Each student still needs to submit their own writeups.

13. Passing Condition

In order to pass the course, students must attempt the quiz and hand in a report for **all labs**. Missing labs must be accounted for by making alternate arrangements with the Lab Supervisor. In addition, you must have:

An overall mark must be **greater than 50%, AND**

Must achieve **40% or above** on **BOTH** the Theory ($\geq 28/70$ marks) **AND**

the Lab ($\geq 12/30$ marks) components of the course.

(**NOTE:** Theory includes Assignments, Reading Quizzes, Tutorial Tests, and the Final Exam)

Final Exam must be attempted to pass the course, even if you manage to achieve 50% overall mark without the final exam.

14.Lecture schedule:

Week	Date for Phys 1008 A & Phys 1008 B	Lecture #	Text Section	Topic	Deadline
1	<u>Mon Jan 10</u> & <u>Wed Jan 12</u>	1		Course Introduction and Math Concepts	RQ1 Ch 16 is due Wed Jan 12
			16.1	Electric Charge	
			16.2	Conductors and Insulators	
	<u>Wed Jan 12</u> & <u>Fri Jan 14</u>	2	16.3	Coulomb's Law	
			16.3	Coulomb's Law (continued)	
			16.4	Electric Field	
2 (Lab 1)	<u>Mon Jan 17</u> & <u>Wed Jan 19</u>	3	16.5	Motion of Charge in E field	RQ2 Ch 17 is due Wed Jan 19 HW1, Intro & Ch 16 is due Tue Jan 18
			16.6	Conductors in electrostatic equilibrium	
			16.7	Gauss' Law for electric fields	
	<u>Wed Jan 19</u> & <u>Fri Jan 22</u>	4	17.1	Potential Energy	
			17.2	Potential	
			17.3	Field and Potential	
3(Tut 1)	<u>Mon Jan 24</u> & <u>Wed Jan 26</u>	5	17.4	Conservation of Energy; moving charges	RQ3 Ch 18 due Wed Jan 26 HW2, Ch 16 is due Tue Jan 25
			17.5	Capacitors	
			17.6	Dielectrics	
	<u>Wed Jan 26</u> & <u>Fri Jan 28</u>	6	17.7	Energy in a Capacitor	
			18.1	Current	
			18.2	EMF & Circuits	
4 (Lab 2)	<u>Mon Jan 31</u> & <u>Wed Feb 2</u>	7	18.4	Resistance & Resistivity	RQ4 Ch 19 is due Wed Jan Feb 2 HW3, Ch 17 is due Tue Feb 1.
			18.5	Kirchhoff's Rules	
			18.6	Series and Parallel Circuits	
	<u>Wed Feb 2</u> & <u>Fri Feb 4</u>	8	18.8	Power and Energy in Circuits	
			18.10	RC Circuits	
			18.11	Electrical Safety	
5 (Tut 2)	<u>Mon Feb 7</u> & <u>Wed Feb 9</u>	9	19.1	Magnetic Fields	RQ5 Ch 20 is due Wed Feb 9 HW4, Ch 18 is due Tues Feb 8
			19.2	Magnetic Force on a point charge	
			19.3	Charged particle moving perp to a uniform B field	
	<u>Wed Feb 9</u> & <u>Fri Feb 11</u>	10	19.4	Charged particle in a uniform magnetic field	
			19.5	Charged particle in crossed E and B fields	
			19.8	Magnetic field due to an electric current	
			20.3	Faraday's Law	
			20.4	Lenz's Law	
			20.4	Lenz's Law (continued)	
			20.9	Inductance	
			21.1	AC currents and voltages, with resistors	

6(Lab 3)	<u>Mon Feb 14</u> & Wed Feb 16	11	21.3	Capacitors in AC	RQ6 Chs 21, 22 is due Wed Feb 16 HW5, Ch 19 is due Tue Feb 15
			21.4	Inductors in AC	
			22.3	EM spectrum	
	<u>Wed Feb 16</u> & Fri Feb 18	12	22.4	Speed of EM waves	
22.5	Travelling EM waves in a vacuum				
22.6	Intensity (part of section)				
			22.7	Polarization	
Week of February 21-25 - Winter Study Break (No classes or tests)					
8 (Tut 3)	<u>Mon Feb 28</u> & Wed Mar 2	13	23.1	Wavefronts and Rays	RQ7 Ch 23 is due Wed Mar 2 HW6, Chs 20, 21 is due Tue Mar 1
			23.2	Reflection	
			23.3	Refraction	
	<u>Wed Mar 2</u> & Fri Mar 4	14	23.4	Total Internal Reflection (TIR)	
23.9	Thin lenses				
9 (Lab 4)	<u>Mon Mar 7</u> & Wed Mar 9	15	23.9	Thin lenses (cont.)	RQ8 Chs 24, 25 is due Wed Mar 9 HW7, Chs 21, 22 is due Tue Mar 8
			24.1	Lenses in combination	
			24.3	The Human Eye	
			24.4	Simple magnifier	
	24.5	Compound microscopes (qualitative only)			
	<u>Wed Mar 9</u> & Fri Mar 11	16	25.1	Constructive and destructive interference	
25.4	Young's Double Slit				
10 (Tut 4)	<u>Mon Mar 14</u> & Wed Mar 16	17	25.5	Gratings	RQ9 Ch 27 is due Mon Wed 16 HW8, Ch 23 is due Tue Mar 15
			25.8	Resolution of optical instruments	
			27.2	Blackbody radiation	
	<u>Wed Mar 16</u> & Fri Mar 18	18	27.3	Photoelectric effect	
	27.6		Spectroscopy		
	27.7		Bohr model: atomic electron energy levels, transitions		
11 (Lab 5)	<u>Mon Mar 21</u> & Wed Mar 23	19	27.7	Atomic Structure	RQ10 Ch 28 is due Wed Mar 23 HW9, Chs 24-25 is due Tue Mar 22
			28.1	Wave particle duality	
			28.2	Matter waves (de Broglie)	
			28.3	Electron microscope	
	<u>Wed Mar 23</u> & Fri Mar 25	20	28.4	Uncertainty Principle	
			28.5	Wave functions: confined particle	
			28.6	Hydrogen Atom	
			28.7	Exclusion Principle	
12 (Rev Tut)	<u>Mon Mar 28</u> & Wed Mar 30	21	28.9	Lasers	RQ 11 Ch 29 is due Wed Mar 30 HW10, Chs 25-27 is due Tue Mar 29
			28.10	Tunneling	
			29.1	Nuclear structure	
			29.2	Binding Energy	
	<u>Wed Mar 30</u> & Fri Apr 1	22	29.3	Radioactivity	
			29.4	Decay rates and half life	
			29.5	Biological effects of ionizing radiation	
			29.7	Nuclear Fission	
13 (Rev Tut)	<u>Mon Apr 4</u> & Wed Apr 6	23	29.8	Nuclear Fusion	RQ 12 Ch 30 is due Wed Apr 6 HW11, Chs 27-28 is Tue Mon Apr 5
			30.1	Fundamental Particles	
			30.2	Fundamental Interactions	
			30.3	Beyond the Standard Model	
	<u>Wed Apr 6</u> & Fri Apr 8	24	30.4	Particle Accelerators	
				Review	



14	Mon Apr 11			No Lecture	HW12 Chs 28-29 is due Tue Apr 12

15. University Policies

Grade Definition:

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 (See above)

Academic Regulations, Accommodations, Plagiarism, Etc.:

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:

<http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/>

Academic Accommodations for Students with Disabilities:

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation.

If you are already registered with the PMC, contact your PMC coordinator to send your *Letter of Accommodation* at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (*if applicable*).

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

*The deadlines for contacting the Paul Menton Centre regarding accommodation for final exams for the Winter exam period is **March 16, 2022**.

For Religious Obligations:

Students requesting academic accommodations on the basis of religious obligation should make a formal, written request to their instructors for alternate dates and/or means of satisfying academic requirements. Such requests should be made during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist, but no later than two weeks before the compulsory event.

Accommodation is to be worked out directly and on an individual basis between the student and the instructor(s) involved. Instructors will make accommodations in a way that avoids academic disadvantage to the student.

Students or instructors who have questions or want to confirm accommodation eligibility of a religious event or practice may refer to the Equity Services website for a list of holy days and Carleton's Academic Accommodation policies, or may contact an Equity Services Advisor in the Equity Services Department for assistance.

carleton.ca/equity/wp-content/uploads/Student-Guide-to-AcademicAccommodation.pdf

For Pregnancy:

Pregnant students requiring academic accommodations are encouraged to contact an Equity Advisor in Equity Services to complete a letter of accommodation. The student must then make an appointment to discuss her needs with the instructor at least two weeks prior to the first academic event in which it is anticipated the accommodation will be required.

carleton.ca/equity/wp-content/uploads/Student-Guide-to-AcademicAccommodation.pdf

Plagiarism:

Plagiarism is the passing off someone else's work as your own and is a serious academic offence. For the details of what constitutes plagiarism, the potential penalties and the procedures refer to the section on Instructional Offences in the Undergraduate Calendar.

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?

All allegations of plagiarism are reported to the Dean of Faculty of Science. Documentation is prepared by instructors and/or departmental chairs.

The Dean writes to the student and the University Ombudsperson about the alleged plagiarism.

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 (see <https://carleton.ca/registrar/academicintegrity/>). The Policy is strictly enforced and is binding on all students. Plagiarism and cheating – presenting another’s ideas, arguments, words or images as your own, using unauthorized material, misrepresentation, fabricating or misrepresenting research data, unauthorized co-operation or collaboration or completing work for another student – weaken the quality of the undergraduate degree. Academic dishonesty in any form will not be tolerated. Students who infringe the Policy may be subject to one of several penalties including: expulsion; suspension from all studies at Carleton; suspension from full-time studies; a refusal of permission to continue or to register in a specific degree program; academic probation; or a grade of Failure in the course.

Assistance for Students:

Academic and Career Development Services: <https://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/>

Important Information:

- Student or professor materials created for this course (including presentations and posted notes, labs, case studies, assignments, and exams) remain the intellectual property of the author(s). They are intended for personal use and may not be reproduced or redistributed without prior written consent of the author(s).
- Students must always retain a hard copy of all work that is submitted.
- Standing in a course is determined by the course instructor subject to the approval of the Faculty Dean. This means that grades submitted by the instructor may be subject to revision. No grades are final until they have been approved by the Dean.
- Carleton University is committed to protecting the privacy of those who study or work here (currently and formerly). To that end, Carleton’s Privacy Office seeks to encourage the implementation of the privacy provisions of Ontario’s Freedom of Information and Protection of Privacy Act (FIPPA) within the university.

Important Dates for 2021/2022 academic year:

<https://carleton.ca/registrar/registration/dates/academic-dates/>