PHYS 1902 – Winter 2026

From Our Star to the Cosmos

We, the people of the Faculty of Science at Carleton University, acknowledge that our campus is located on the traditional, unceded territories of the Algonquin Anishinabeg people. Miigwetch for your hospitality and stewardship of this territory and the teachings that come from it. We are grateful for this land, the air that we breathe, and the water that sustains us all as well as for the animals, plants and other living beings: these enable us to research, teach, mentor, support, study, and learn. We recognize our responsibility to our natural environment and to reconciliation with Indigenous peoples.

Course Instructor: Prof. Simon Viel

How to address me: by first name

Gender Pronouns: (he/him)

Email: sviel@physics.carleton.ca

N.B. Please include "**PHYS1902**" in the email subject line.

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).

Student Hours: Weekly TBA and by appointment (please send me an email)

Office Location: HP 3370 and Zoom

Asynchronous online lectures

Prerequisites: None

Preclusions: Precludes additional credit for PHYS 2203.

Faculty of Science B.Sc. students may only take this course as a free elective; Computer Science (BCS) students may only take it as a breadth elective.

Department/Unit: Physics

Course TAs: TBA

Learning Materials

Learning Material	Options for Purchasing	Approximate Cost
Astronomy Today, 9e, Eric Chaisson and Steve McMillan. Pearson ISBN-13: 9780134873787	Online textbook from www.pearson.com or Carleton Bookstore	$75.00 (6 months online access)

Students often find that reading the textbook and answering the self-test questions there is an essential part of learning the course material. That being said, **students are not required to purchase textbooks or other learning materials for this course**.

Course notes and videos will be posted on Brightspace. The course notes and videos are protected by **copyright**: they are for your own educational use, and you are ***not*** permitted to share them.

Late and Missed Work Policies

Late Work

Late work will not necessarily be accepted and may result in a grade of zero.
It is your responsibility to **email the instructor** (include **"PHYS 1902"** in the subject line) ahead of the deadline to request an extension.
It is also possible to use the academic considerations form.

Missed Work

Short-term (5 days or less): For assignments, please see the above statement on late work. There will be no deferred midterm exam; if the midterm exam is missed, then the midterm exam will receive a percentage grade equal to that of the final exam.

Long-term (> 5 days): Please email the instructor, or use the longer-term accommodation request form.

Topics Covered

Official course description: Starting with the Sun, the course studies its composition and source of power, then compares our Sun with the other stars in the galaxy and beyond. Modern ideas concerning the structure, origin and evolution of the universe, pulsars and supernovae are examined.

The primary course content is that of the textbook chapters 1-5 and 16-28, with supplementary material to be provided in the online lectures and course notes.

Topic	**Textbook Chapter**
Introduction	1-2
Radiation	3
Spectroscopy	4
Telescopes	5
The Sun	16
The Stars	17
The Interstellar Medium	18
Star Formation	19
Stellar Evolution	20
Stellar Explosions	21
Neutron Stars and Black Holes	22
The Milky Way Galaxy	23
Galaxies and Dark Matter	24-25
Cosmology	26
The Early Universe	27
Life in the Universe	28

Important dates and deadlines can be found here: https://carleton.ca/registrar/registration/dates/academic-dates/, including class suspension for fall, winter breaks, and statutory holidays.

Assessments

COMPONENT	GRADE VALUE
ASSIGNMENTS	60 %
MIDTERM	15 %
FINAL EXAM	25 %

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.

Assignments (60%)

Four written assignments will be completed outside of class.
They will be due on 11:59 pm Eastern time on the due dates.

If you have any questions, please send me an email or visit me during student hours.

The work you hand in must be your own. Replicated / copied / plagiarized assignments (this includes AI-generated answers) will receive a grade of zero.

Midterm Exam (15%)

The midterm exam will be held **online** on Monday February 23, 2026.
This exam will be open book and open notes, and consist of multiple-choice questions.

Final Exam (25%)

There will be a 3-hour **online** final exam during the final examination period in April.
The final exam will be cumulative, open book and open notes, and consist of multiple-choice questions. **The final exam is a requirement** to successfully complete this course.

Academic Accommodations and Regulations

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/).

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/

Statement on Artificial Intelligence Usage

The use of large-language models and generative AI for course work is prohibited.

As our understanding of the uses of AI and its relationship to student work and academic integrity continue to evolve, students are required to discuss their use of AI in any circumstance not described here with the course instructor to ensure it supports the learning goals for the course.

Statement on Academic Integrity

Students are expected to uphold the values of academic integrity, which include fairness, honesty, trust, and responsibility. Examples of actions that that compromise these values include but are not limited to plagiarism, accessing unauthorized sites for assignments or tests, unauthorized collaboration on assignments or exams, and using AI tools such as ChatGPT when your assessment instructions say it is not permitted.

Misconduct in scholarly activity will not be tolerated and will result in consequences as outlined in Carleton University's Academic Integrity Policy. A list of standard sanctions in the Faculty of 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 abide by Carleton University's Academic Integrity Policy.

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 me**: 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.

Online Community Expectations for Social Platforms

With the growing use of social platforms (e.g., Discord), it is important to keep in mind that university codes of conduct still apply to the behaviours of students online.

Please be considerate and respectful while engaging with peers and remember that we are all humans, and that your words matter. If any student witnesses or experiences harassment, I encourage you to reach out to me. Alternatively, you can contact Ombuds Services or Carleton Equity and Inclusive Communities.

Online communities can be highly beneficial to students and can help to facilitate learning within the course. I encourage people to ask questions, learn from one another, and have open discussions about class material. That said, any acts of academic misconduct (i.e., cheating) will not be tolerated and will result in serious consequences ranging from a grade reduction to expulsion (see Statement on Academic Integrity).

• Examples of appropriate peer-to-peer sharing/learning vary from course to course. In this course appropriate peer-to-peer sharing includes: identifying the proper formula to use, identifying an incorrect or missing step in a person's work, brainstorming potential reasons behind a concept, suggesting helpful sites and videos for learning a concept.

• Examples of unacceptable peer-to-peer sharing: Posting or sharing the answers, indicating which answers are correct on assignments, sharing links to solutions.

If you are concerned, confused, or conflicted over something, please reach out to me through email for help. Let's do our best to support one another in this class and keep the online experience a safe, inclusive, and positive experience for everyone.