



School of Science
ASTR 100
Introduction to Astronomy
Winter 2025
3 Credits

Course Outline

INSTRUCTOR:	CJ Parr	OFFICE HOURS:	By appointment
OFFICE:		CLASSROOM:	A2206 (Lecture Hall)
E-MAIL:	cparr@yukonu.ca	CLASS TIME:	Mondays and Wednesdays 4:00 – 5:30 PM

COURSE DESCRIPTION

Astronomy 100 is a survey of the sciences of astronomy and astrophysics. These disciplines undertake to uncover the basic rules and mechanisms that govern the behaviour of planets, stars, galaxies, and the universe as a whole. This course covers some of the great triumphs of astronomy, some of the laws that we have discovered that do work, and some areas that still baffle us, where no satisfactory explanation has been found.

COURSE REQUIREMENTS

None, however students should be comfortable with basic algebraic manipulation and use of roots and exponents.

EQUIVALENCY OR TRANSFERABILITY

Students should be aware that receiving institutions determine course transferability. Find further information at: <https://www.yukonu.ca/admissions/transfer-credit>.

LEARNING OUTCOMES

Upon successful completion of the course, students will be able to:

- Demonstrate knowledge of the basic history of astronomy, and how it relates to the overall history of science,
- Summarize and demonstrate knowledge of basic observational astronomy, both naked-eye and assisted by a telescope,
- the nature and scale of the solar system; motion, similarities, and differences of the planets, moons, and other bodies in the solar system.
- the formation and evolution of the sun and other stars, including supernovae, neutron stars, and black holes, the Milky Way galaxy, other galaxies, and galactic morphology.
- Basic cosmology, including the formation, scale, age, and evolution of the universe.

COURSE FORMAT

Students are expected to attend two 1.5-hour lectures per week in person, although students may attend synchronously online if they let the instructor know with enough time ahead to prepare. Students can expect to spend approximately 4 hours per week outside of class time on assignments, readings, and/or other online material, although this time can vary from individual to individual.

EVALUATION

Attendance & Participation	10%
News Article Assignment	10%
Observation Journal	5%
Assignments	15%
Midterm Exam	25%
Final Exam	35%
Total	100%

The final examination will cover the entire course and is worth 35% of the final mark. It will be held at the end of the term during the exam period. The exact date of the examination is available on the course website from the date that registration is available. Students should contact their instructor immediately if conflicts arise.

TEXTBOOKS & LEARNING MATERIALS

Comins. *Discovering the Universe*. 11th Edition. New York: W.H. Freeman/Macmillan Learning, 2019. ISBN 9781319424404

OR if you do not want a hard-copy of the textbook, you can purchase the stand-alone Achieve access which includes an online e-book version of the textbook instead – other options will be discussed in class.

COURSE WITHDRAWAL INFORMATION

Students may officially withdraw from a course or program without academic penalty up until two-thirds of the course contact hours have been completed. Last day to withdraw or change to audit from winter term academic courses without academic penalty is Thursday, Mar 13, 2025.

Refer to the YukonU website for important dates: www.yukonu.ca/admissions/important-dates

ACADEMIC INTEGRITY

Students are expected to contribute toward a positive and supportive environment and are required to conduct themselves in a responsible manner. Academic misconduct includes all forms of academic dishonesty such as cheating, plagiarism, fabrication, fraud, deceit, using the work of others without their permission, aiding other students in committing academic offences, misrepresenting academic assignments prepared by others as one's own, or any other forms of academic dishonesty including falsification of any information on any Yukon University document.

Note that generative artificial intelligence tools such as Chat GPT can be useful in the same way as a web search or Wikipedia. They can be a starting point but cannot be used to do the work for you. Simply copying the output from an AI source such as Chat GPT and submitting it as your own work will be considered plagiarism the same as if you copied directly from a book, webpage, or classmate. Furthermore, appropriate referencing is expected in submitted work. If generative AI is used as part of your writing workflow, this must be indicated either as a footnote or citation. Generative AI cannot be used as a reference source. Chat GPT and similar tools are not actual sources of information and should not be referenced as such, much as you would not reference the results of a web search. References should be to the published scientific literature, or, when appropriate, the popular scientific media.

Please refer to Academic Regulations & Procedures (updated bi-annually) for further details about academic standing, and student rights and responsibilities: www.yukonu.ca/policies/academic-regulations

ACCESSIBILITY AND ACADEMIC ACCOMMODATION

Yukon University is committed to providing a positive, supportive, and barrier-free academic environment for all its students. Students experiencing barriers to full participation due to a visible or hidden disability (including hearing, vision, mobility, learning disability, mental health, chronic or temporary medical condition), should contact Accessibility Services for resources or to arrange academic accommodations: access@yukonu.ca. [Text updated 16 November 2022]

TOPIC OUTLINE

Lecture Schedule

Week	Date (or week of....)	Class	Lecture topics
1	Jan. 08	1	Course introduction Discovering the Night Sky
2	Jan 13	2	Gravitation and Motion of the Planets
	Jan. 15	3	Light and Telescopes Atomic Physics and Spectra
3	Jan. 20	4	Exoplanets Formation of the Solar System
	Jan. 22	5	Earth and the Moon
4	Jan. 27 - 29	6-7	Other Terrestrial Planets
5	Feb. 03	8	The Outer Planets Vagabonds of the Solar System
	Feb. 05	9	
6	Feb. 10	10	The Sun Review for the Midterm exam
	Feb. 12	11	Midterm Exam
7	<i>Feb. 17 and 21st</i>	-	Reading Week (no classes)
8	Feb. 24	12	Characterizing Stars
	Feb. 26	13	The Lives of Stars from Birth Through Middle Age
9	<i>Mar. 03</i>	<i>14</i>	
	<i>Mar. 05</i>	<i>15</i>	The Deaths of Stars
10-13	Mar. 10	16	Black Holes: Matters of Gravity

Week	Date (or week of...)	Class	Lecture topics
	Mar. 12 and 17th	17-18	The Milky Way Galaxy Galaxies
	Mar. 19 and 24th	19	
14	Mar. 26 – 31st	20-21	Quasars and Other
	Apr. 07	22	Cosmology Review
	Apr. 09	23	<i>Final Exam Review</i>
	Apr. 14	-	Final Exam 4:00 – 7:00 pm