



ASTR 100 - COURSE OUTLINE

INSTRUCTOR: Jaclyn Semple
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OFFICE LOCATION: A2507

CLASSROOM: A2206 (Lecture Hall)
CLASS TIMES: Tuesdays 6pm – 9pm
DATES: Jan 5 – Apr 23, 2022

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.

The course will show you 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.

ASTR 100 is a non-lab science credit.

COURSE REQUIREMENTS

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

EQUIVALENCY OR TRANSFERABILITY

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 have an understanding of:

- The history of astronomy, and how it relates to the overall history of science.
- 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

Weekly breakdown of instructional hours

Lectures: 3 hours per week

The course content is covered through lectures, in-class activities, and homework assignments using the prescribed textbook and accompanying online homework system (Achieve). Students can expect to spend an additional 10 hours per week on self-paced study and homework problems in order to fully understand the material.

Delivery format

Lectures for the Winter 2022 offering of this course will be delivered in a “HyFlex” format in which course material is delivered both in-person and online at the same time by the same instructor. Students can choose whether to attend classes in person or to join in online. In-person lectures will be delivered on the Ayamdigut (Whitehorse) campus; the real-time stream of these lectures will be available on Zoom. Due to the complex subject matter covered in this course, it is strongly recommended that students choose the face-to-face option if possible.

Course material will be posted on Moodle and Achieve, including weekly lecture notes, textbook readings, homework, quizzes, announcements, and other useful or interesting material related to the course.

EVALUATION

Attendance & Participation	5%
Achieve Homework	35%
Midterm Test	25%
Final Exam	35%
Total	100%

Attendance & Participation (5%)

Regular class attendance and participation is mandatory and will be assessed through the use of in-class activities and discussion.

Achieve Homework (35%)

There will be weekly Achieve homework assignments due during the term, worth a total of 35% of the final grade. Unless prior arrangements have been made with the instructor, late assignments will not be accepted and will thus receive a mark of 0.

Midterm Test (25%)

There will be one midterm test worth 25% of the final grade.

Final Examination (35%)

The final examination will cover the entire course and is worth 35% of the final grade. It will be held at the end of the term during the exam period. The exact date of the exam will be announced as soon as it is set by the School of Science. **A minimum mark of 50% on the final exam is required in order to pass the course.**

COURSE WITHDRAWAL INFORMATION

Refer to the YukonU website for important dates.

TEXTBOOKS & LEARNING MATERIALS

Comins. *Discovering the Universe*. 11th Edition. New York: W.H. Freeman/Macmillan Learning, 2019. ISBN 9781319424404 (loose-leaf version WITH **Achieve** access code)

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. **All assignments will be done through Achieve.**

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.

Please refer to Academic Regulations & Procedures for further details about academic standing and student rights and responsibilities.

ACADEMIC ACCOMMODATION

Reasonable accommodations are available for students requiring an academic accommodation to fully participate in this class. These accommodations are available for students with a documented disability, chronic condition or any other grounds specified in section 8.0 of the Yukon University Academic Regulations (available on the Yukon University website). It is the student's responsibility to seek these accommodations by contacting the Learning Assistance Centre (LAC): LearningAssistanceCentre@yukonu.ca.

TOPIC OUTLINE

Week	Dates	Chapter	Topic
1	Jan. 5-7	-	Course Intro (no class)
2	Jan. 10-14	1 2	Discovering the Night Sky Gravitation and the Motion of the Planets
3	Jan. 17-21	3 4	Light and Telescopes Atomic Physics and Spectra
4	Jan. 24-28	5 6	Exoplanets and the Formation of Planetary Systems Formation of the Solar System
5	Jan. 31-Feb. 4	7 8	Earth and the Moon The Other Terrestrial Planets
6	Feb. 7-11	9 10	The Outer Planets Vagabonds of the Solar System
7	Feb. 14-18	-	Midterm
-	Feb. 21-25	-	READING WEEK
8	Feb. 28-Mar. 4	11	The Sun: Our Extraordinary Ordinary Star
9	Mar. 7-11	12 13	Characterizing Stars The Lives of Stars from Birth Through Middle Age
10	Mar. 14-18	14	The Deaths of Stars
11	Mar. 21-25	15	Black Holes: Matters of Gravity
12	Mar. 28-Apr. 1	16 17	The Milky Way Galaxy Galaxies
13	Apr. 4-8	18	Quasars and Other
14	Apr. 11-12	19	Cosmology

Specific dates of topic coverage and assessments may be subject to change.