



## COURSE OUTLINE

### **ASTR 100** **Introduction to Astronomy**

**3 CREDITS**

PREPARED BY: Jaclyn Semple, Instructor  
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APPROVED BY: Joel Cubley, Chair, School of Science  
DATE: December 17, 2020



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## INTRODUCTION TO ASTRONOMY

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**INSTRUCTOR:** Jaclyn Semple

**OFFICE HOURS:** TBD

**OFFICE LOCATION:** A2410

**CLASSROOM:** Zoom

**E-MAIL:** jsemple@yukonu.ca

**TIME:** Tuesdays 4pm – 7pm

**TELEPHONE:** 867-456-8548

**DATES:** Jan 4 – Apr 20, 2021

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### 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.

### PREREQUISITES

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

### RELATED COURSE REQUIREMENTS

In Winter 2021, ASTR100 will be delivered remotely using the Zoom platform. Students are required to have access to a computer with a reliable internet connection. A headset with a microphone is recommended.

### EQUIVALENCY OR TRANSFERABILITY

The transferability of this course is still being evaluated. Receiving institutions always determine course transferability. Further information and assistance with transfers may be available from the School of Science. For more information about transferability contact the School of Science office.

## 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

Lectures: 3 hours per week, online via Zoom

One synchronous lecture will be delivered weekly, and students are encouraged to join the Zoom session so that they can ask questions in real-time and directly engage with the instructor. In addition, expect to spend at least 10 hours per week on self-paced study and homework problems in order to fully understand the material.

Material will be posted on Moodle and SaplingPlus, including lecture notes, assignments, course announcements, suggested textbook problems, and other useful or interesting material related to the course.

## ASSESSMENTS:

### **Attendance & Participation (5%)**

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

### **Assignments (35%)**

There will be weekly SaplingPlus 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 Exam (35%)**

The final examination will cover the entire course and is worth 35% of the final grade. **A minimum mark of 50% on the final exam is required in order to pass the course.**

## EVALUATION

Attendance & Participation	5%
Assignments	35%
Midterm Test	25%
Final Exam	35%
<b>Total</b>	<b>100%</b>

## TEXTBOOKS AND MATERIAL

Comins. Discovering the Universe. 11th Edition. New York: W.H. Freeman/Macmillan Learning, 2019. ISBN 9781319277307 (loose-leaf version WITH **SaplingPlus** access code)

OR you can purchase the stand-alone SaplingPlus access, which includes an online eBook version of the textbook instead. **All assignments will be done through SaplingPlus.**

## ACADEMIC AND STUDENT CONDUCT

Information on academic standing and student rights and responsibilities can be found in the current Academic Regulations that are posted on the Student Services/ Admissions & Registration web page.

## PLAGIARISM

Plagiarism is a serious academic offence. Plagiarism occurs when a student submits work for credit that includes the words, ideas, or data of others, without citing the source from which the material is taken. Plagiarism can be the deliberate use of a whole piece of work, but more frequently it occurs when students fail to acknowledge and document sources from which they have taken material according to an accepted manuscript style (e.g., APA, CSE, MLA, etc.). Students may use sources which are public domain or licensed under Creative Commons; however, academic documentation standards must still be followed. Except with explicit permission of the instructor, resubmitting work which has previously received credit is also considered plagiarism. Students who plagiarize material for assignments will receive a mark of zero (F) on the assignment and may fail the course. Plagiarism may also result in dismissal from a program of study or the University.

## YUKON FIRST NATIONS CORE COMPETENCY

Yukon University recognizes that a greater understanding and awareness of Yukon First Nations history, culture and journey towards self-determination will help to build positive relationships among all Yukon citizens. As a result, to graduate from ANY Yukon University program, you will be required to achieve core competency in knowledge of Yukon First Nations. For details, please see [www.yukonu.ca/yfnccr](http://www.yukonu.ca/yfnccr).

**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. If a student requires an academic accommodation, he/she should contact the Learning Assistance Centre (LAC): lac@yukonu.ca.

**TOPIC OUTLINE**

<b>Week</b>	<b>Dates</b>	<b>Chapter</b>	<b>Topic</b>
1	Jan. 4-8	-	Course Intro
2	Jan. 11-15	1 2	Discovering the Night Sky Gravitation and the Motion of the Planets
3	Jan. 18-22	3 4	Light and Telescopes Atomic Physics and Spectra
4	Jan. 25-29	5 6	Exoplanets and the Formation of Planetary Systems Formation of the Solar System
5	Feb. 1-5	7 8	Earth and the Moon The Other Terrestrial Planets
6	Feb. 8-12	9 10	The Outer Planets Vagabonds of the Solar System
7	Feb. 15-19	-	<b>Midterm</b>
-	Feb. 22-26	-	<b>READING WEEK</b>
8	Mar. 1-5	11	The Sun: Our Extraordinary Ordinary Star
9	Mar. 8-12	12 13	Characterizing Stars The Lives of Stars from Birth Through Middle Age
10	Mar. 15-19	14	The Deaths of Stars
11	Mar. 22-26	15	Black Holes: Matters of Gravity
12	Mar. 29-Apr. 2	16 17	The Milky Way Galaxy Galaxies
13	Apr. 5-8	18	Quasars and Other
14	Apr. 13-17	19	Cosmology

Specific dates of topic coverage may be subject to change. Some topics may not be covered depending on time constraints.