ASTR 102: Exploring the Cosmos

An overview of our place in the cosmos intended for non-science students. Starting from human's fascination of the night sky, we will cover a variety of topics from all scales of the Universe — quantum mechanics, our solar system, stars, galaxies, and cosmology.

Class information

Class times: Mondays & Thursdays from 13:00 to 14:20 in Elliott 167

Material: Available on the course page on Brightspace (bright.uvic.ca)

Textbook: *Stars and Galaxies* by Seeds & Backman (any edition). **Not required** (but recommended for supplementary reading and additional questions/exercises to help you study!)

Lectures: In person, but will be recorded and uploaded onto Brightspace. *Please contact me if you have privacy concerns regarding the recordings.*

Contact information for instructor

Office: Elliott 138b

Email: spengler@uvic.ca

Office hours: Drop-ins available Mondays & Thursdays from 11:00 am to 12:30 pm in Elliott 138b. Other times available by request for in-person or virtual meetings.

Lab information

You MUST pass the lab component to pass the course!

Sign up for one lab section in addition to this lecture.

Purchasing the lab manual is **required**.

Lab coordinator: Erica Franzmann (astrolabs@uvic.ca)

Grading

Final grades will be determined based on the following:

Homework quizzes:	15%
Class quizzes:	10%
Midterm exam:	15%
Lab component:	20%
Final exam:	40%

Homework quizzes: There will be one quiz per week to be completed on Brightspace. Each quiz will have 10 questions with a time limit of 15 minutes*. The questions will be similar to what you will see on the midterm and final exams.

Class quizzes: For each lecture, there will be a 2-3 question quiz with a time limit of 5 minutes*. These can be completed during our mid-class break time or after class (deadline: 23:59 on the day of the lecture). These will be simple questions based on the core concepts of the lecture. The grade for these quizzes will be based on the top 75% of answered questions (in other words: you can miss a couple quizzes or get some answers wrong, and still receive 100% in this component).

Midterm exam: This will be on Thursday, October 19, 2023 with a time limit of 80 minutes*.

Lab component: **You must pass the labs to pass the course!** There are five labs in total, offered every other week.

Final exam: Date and time TBD. Consider consulting the final exam schedule before making holiday travel plans!

**accommodations available for students who register with the Centre for Accessible Learning*

Plagiarism

Plagiarism is unacceptable. Your work must be your own, but discussions with classmates are fine (and encouraged!). Never copy another person's work. See more details on the plagiarism policy here: http://www.uvic.ca/library/research/citation/plagiarism/

Tentative lecture schedule with supplementary sections from textbook

Lecture	Date	Topic(s)	Supplementary reading sections
1	September 7	Course introduction & the role of astronomy	2.1-2.3, 3-1-3.2, 4.1
2	September 11	Scientific method & telescopes	6.2-6.5
3	September 14	Properties of light and particles I	6.1, 7.1-7.3
4	September 18	Properties of light and particles II	6.1, 7.1-7.3
5	September 21	Revisiting the history of astronomy	4.2-4.5
6	September 25	Laws of motion & gravity	5.1-5.3
7	September 28	Measures of distance	1, 9.1
	October 2	No class	
8	October 5	The Sun	8.1-8.3
	October 9	No class	
9	October 12	Our solar system	
10	October 16	The interstellar medium	10.1-10.3
	October 19	Midterm exam	
11	October 23	Star and planet formation	11
12	October 26	Stellar evolution	12, 13
13	October 30	Extreme stars and extrasolar planets	14
14	November 2	HR and colour-magnitude diagrams	9.2-9.6
15	November 6	The Milky Way galaxy	15
16	November 9	Our galactic neighbourhood	
	November 13	No class	
17	November 16	Galaxy evolution I	16
18	November 20	Galaxy evolution II	17
19	November 23	The Big Bang & first stars and galaxies	18.2
20	November 27	Cosmology I	18.1
21	November 30	Cosmology II	18.3, 18.4
	December 4	Review	