

# ASTR 102 – Exploring the Cosmos

## Fall 2016 – Syllabus

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### Contact info:

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Office hours: Mondays and Thursdays: 10:00-11:00am.

**Class Time: Mondays and Thursdays from 13:00 to 14:20. Bob Wright Centre A104**

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### Textbook:

Astronomy Today: 8<sup>th</sup> Edition by Chaisson and McMillan

**\*\*WITH MASTERING ASTRONOMY\*\***

Selections from Chapters 1-5 and 16-28. Purchasing the textbook including only these chapters is perfectly acceptable. Readings should be done before you get to class.

**Plus: an i>clicker and the Astronomy 102 Lab Manual**

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### Grade Breakdown:

Assignments:	13%
i>clicker:	7%
Midterm Examination:	20%
Lab Section:	20%
Final:	40%

1. There will be one assignment per week done through the Mastering Astronomy software.
  2. Late assignments will not be accepted
  - 3. You cannot pass the course if you do not pass the lab section.**
  4. On all examinations the only acceptable calculator is the Sharp EL-510R (~\$10 at the Bookstore). Do not bring any other calculator to examinations.
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A note on Plagiarism: Astronomy is a science in which collaboration is essential! **BUT, do not copy each other or additional sources without proper citation.** Copying is called plagiarism, and that is very, very bad. **You will receive a zero among other, more serious actions up to and including expulsion. For more information, see:**  
<http://www.uvic.ca/library/research/citation/plagiarism/>

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## *Introduction:*

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Welcome to Astronomy 102! This course will offer insights into the universe around us from planets and stars, to black holes, galaxies, and the frontier beyond.

For instance, do you know what stars are made of? Or, more importantly, did you know that the atoms in your body used to be in the centre of an ancient, dead star? What did the universe look like when time began? What will the universe look like at the end of time? We'll discuss all of these topics and more (using very little math, as this course is designed for non-scientists) and hopefully spark some good conversations that go beyond the course content. So, if you are interested in material that we are not covering and you think I might know a bit about the subject, **always feel free to ask me!**

We will begin with local observations that you can make with just your naked eye or a good pair of binoculars. Then, building on these concepts, we will work our way out to the boundary of the known universe, discussing observational techniques and the most cutting edge results from recent research in each field.

Below, you will find a schedule of what we are covering each day. The readings are chapters or sections from Astronomy Today by Chaisson and McMillan (8<sup>th</sup> edition). **Readings should be performed before you get to class** so you can get the most out of the course content. At the beginning of class, we will also have i>clicker questions which will count only for participation marks.

**Schedule:**

<b><u>Date</u></b> (dd-mm-yyyy)	<b><u>Reading</u></b>	<b><u>Topics</u></b>
08-09-2016	1.1, 1.2	Introduction / Our Home
12-09-2016	3.1, 3.3, 5.1, 5.2	Collecting Light with Telescopes
15-09-2016	4.1,5.5	Spectroscopy + More Telescopes
19-09-2016	16.1-16.3	The Sun – Layers, Composition, Prominences
22-09-2016	16.4-16.7	The Sun – Interior/Exterior Connection, Fusion
26-09-2016	17.1-17.6	Distances, Magnitudes, and Colours
29-09-2016	3.5, 17.7-17.8	Measuring Mass and Other Stellar Properties
03-10-2016	20.1-20.3	Stellar Evolution – Low Mass
06-10-2016	20.4-20.6	Stellar Evolution – High Mass + Clusters
10-10-2016	THANKSGIVING NO CLASS	Enjoy Your Break!
13-10-2016	21	Novae and Supernovae
17-10-2016	22	Pulsars and Black Holes
20-10-2016	18	The Interstellar Medium
24-10-2016	19.1-19.4	Star Formation
27-10-2016	<b>MIDTERM</b>	<b>All Material Up to This date</b>

31-10-2016	23.1-23.3	The Milky Way – An Introduction
03-11-2016	23.4-23.7	Spiral Arms, The Galactic Centre, and Weird Measurements
07-11-2016	24.1-24.2	Other Galaxies
10-11-2016	READING BREAK NO CLASS	Enjoy Your Break!
14-11-2016	24.3-24.5	Hubble's Law and AGNs
17-11-2016	25.1-25.3	Dark Matter and Galaxy Collisions
21-11-2016	26.1-26.4	Cosmology 1
24-11-2016	26.5-26.7	Cosmology 2
28-11-2016	27	The early universe
01-12-2016	28 – Guest Lecture By Sébastien Lavoie	Life in the universe

Clear skies,

Steve