

Astronomy 102 - "Exploring the Cosmos"

Mon Thu 13:00-14:20 E11 167



Professor: Office hours:	Chris Pritchett (Elliott 215) - pritchett@uvic.ca Mon Thu 14:30-15:30 – or email for an appointment
Textbooks:	1. Chaisson/McMillan: "Astronomy Today", 8 th ed, with Mastering Astronomy 2. Lab Manual 3. i>clicker
Web site:	http://www.astro.uvic.ca/~pritchett/Astr102
Lecture Notes:	On the above web site
Marks:	Assignments ^a 13% (Mastering Astronomy website) Midterm Exams ^b 20% (Oct 9 th and Nov 6 th) Lab ^c 20% (starts Sep 15/16 th) i>clicker ^d 7% Final 40%
	^a There will "normally" be one assignment per week, normally due on Mondays at 11:59pm . Late assignments are not accepted. ^b The Midterm exams will be held on Oct 9 and Nov 6 , in class time. ^c You cannot pass the course without also passing the lab (department regulation; cannot be waived) . Labs start on Sep 15/16 th . Make sure you have a lab section. ^d Half the i>clicker mark is for participation and half is for the correct answer.
Grade Conversion:	A+ (90-100%), A (85-89), A- (80-84), B+ (77-79), B (73-76), B- (70-72), C+ (65-69), C (60-64), D (50-59), F (0-49).
Reference Materials:	A number of reference books will eventually be held in the Reserve Reading Room (1st floor of the Main Library) for reference, including the text (7 th ed.).
Calculators:	On all examinations the only acceptable calculator is the Sharp EL-510R (~\$10 at the Bookstore). DO NOT bring any other calculator to examinations.
Course Level:	For non-scientists; hardly any math; no science prereq's
Course Content:	Chaisson Ch 28-16 – Stars, Galaxies, the Universe (but backwards)
Assignment	See "Getting Started" on class web site. First assignment due Mon Sep 15. Read Ch. 3. Connect to Facebook group. Register clicker. Go to lab.

Introduction

- Light and Distance [AT 3.1-3.3]
- Temperature [AT 3.4]
- Doppler Effect [AT 3.5]
- Angular Measure [AT 1.3, box p 11]

Galaxies and Cosmology Introduction

- The Milky Way [AT 23 - just a summary - use notes]
- Historical Intro [best to use notes for this]
- Star counts [AT 23.2]
- Parallax [AT 17.1]
- Pulsating Variables [AT 23.2]
- Shapley and the size of the Milky Way [AT 23.2]
- Dust, Trumpler, star counts [-]
- Galaxy Velocities [AT 24.3]
- Nature of Nebulae and the Great Debate [AT 23.2]
- Hubble's resolution of the problem [a few sentences at the end of 23.2]
- Expansion of the Universe [AT 24.3]
- Dark Matter [AT 23.6, 25.1]

Galaxies and Cosmology - the Big Bang

- The Hubble expansion, misconceptions, age etc [AT 26.2]
- Temperature of Universe [AT 27.2 part]
- Evidence for a Hot Big Bang ...
- Big Bang Nucleosynthesis [AT 27.3]
- Structure of Atoms
- Fusion [AT 16.6]
- Cosmic Background Radiation [AT 26.7, 27.6]
- Blackbody Radiation [AT 3.4]
- Inflation and the Horizon Problem [AT 27.4]

Cosmology - After the Big Bang

- Cosmological Principle [AT 26.1]
- Fate of the Universe [AT 26.3-26.5]
- Supernova Cosmology and Dark Energy [AT 26.5-26.6]
- Flatness Problem - Inflation revisited [AT 27.4]

Galaxies

- Milky Way [AT 23 - parts only]
- Galaxy Classification [AT 24.1]
- Hydrostatic equilibrium [AT 16.2]
- Black Holes [AT 22.5-22.8]
- Supermassive black holes [AT 23.7, 25.4]
- Radio Galaxies and AGN's [AT 24.5, 25.4]
- Distribution of Galaxies in Space [AT 24.2, 25.5, 26.1]
- Galaxy and Structure Formation [AT 27.5, 25.3]

Stars

- Physical Properties of Sun [AT 16.1]
- Solar Neighbourhood [AT 17.1]
- Stellar Temperatures and Spectra [AT 17.3]
- Stellar Sizes [AT 17.4]
- Hertzsprung-Russell Diagram [AT 17.5]
- Stellar Masses [AT 17.7]
- Other Stellar Properties [AT 17.8]
- Evolution - Leaving the Main Sequence [AT 20.1]
- Evolution of a Solar Star [AT 20.2]
- Death of Low Mass Stars [AT 20.3]
- Evolution of Massive Stars [20.4]