

University of Victoria
Department of Physics and Astronomy

Astronomy 101 - Exploring the Night Sky

Summer 2016 Syllabus

General Information

Instructor: Travis Martin **Email:** travismartin@uvic.ca **Office:** Elliot 107
Office Hours: Wednesday & Friday, 2:30-4:00 **Phone:** 250-721-7703
Course Webpage: <http://coursespaces.uvic.ca>

Lecture Schedule: Tuesday, Wednesday, Friday from 10:30am - 12:20pm in **Elliot 167**.

Prerequisites: There are no prerequisites for this course. The material covered in this course will be taught with a minimum expectation of mathematics. Students comfortable with mathematics and physics may wish to consider taking ASTR150 and/or 250.

Required Materials:

- **Astronomy Today** by Chaisson & McMillan Custom Edition (Other editions will work, too)
- Astro 101 Lab Manual
- i>Clicker
- University approved calculator (e.g. Sharp EL-510R or EL-510RNB; they can be bought in the Bookstore for about \$10)

Labs: The lab schedule can be found at http://www.uvic.ca/science/physics/assets/docs/timetables/2016-17/Summer_2016_Labs.pdf. The email addresses for your lab TA can be found in the same document.

Some notes regarding the labs for this course:

- **You must attend your scheduled lab section.** You are not free to attend other lab sections without approval of the lab supervisor, Rob Rempel.
- **You must complete all labs.** If you miss a lab period for a **valid reason**, contact me ASAP. I will determine approval to perform a make-up lab, and forward the approval to the lab supervisor.
- **You must achieve a passing grade in the labs in order to pass the course.**

Course Outline

This course will cover the following major topics:

- The basics of astronomy: how and what we can learn with observations
- Our solar system: a tour of the planets and our star
- Life in the universe
- Modern astronomy and beyond (may go beyond material from the textbook)

Below is a rough outline of the course. This is subject to change depending on the depth of in-class discussion and other factors that can extend the amount of time it takes to cover the material. In case I need to cancel a class, I will always give at least 24h notice, unless there is an emergency.

Class	Chapters	Topic Description	Labs/Quizzes
May 10	1	The scientific method, elementary concepts, and initial observations.	
May 11	2.1-2.3	Ancient astronomy and the transition to heliocentricity.	
May 13	2.4-2.7	Early revolutions in astronomy.	
May 17	3 & 4	Behaviour of Light & Spectroscopy	Quiz #1
May 18	5	Telescopes	
May 20	6	Formation of the Solar System	
May 24	16.1-16.5,	The Sun and the stars	Quiz #2
May 25	7.2, 7.5, 7.6, & 8	The Earth and the Moon	
May 27	8 & 9	Mercury and Venus	
May 31	10, 14.1, & 14.4	Mars, Asteroids, & Meteoroids	Quiz #3
June 1	11 & 12	Jupiter and Saturn	
June 3	13, 14.2-14.3	Uranus and Neptune, Pluto, Dwarf Planets, and Beyond	
June 7	15.2-15.5	Extrasolar Planets	Quiz #4
June 8	28.1-28.2	Life in our solar system	
June 10	28.3-28.4	Search for life outside our solar system	
June 14	-	Manned and unmanned space missions	Quiz #5
June 15	-	Non-light astronomy - SNO, Super-Kamiokande, IceCube	
June 17	-	The unknown - discussions about the “big questions” in astronomy	
June 21		Extra day (in case material takes longer)	
June 22		Extra day (in case material takes longer)	
June 24	-	Final Exam Review	

Grading

This course has three grading components: clicker questions (20%), quizzes (25%), labs (25%), and exams (30%). The breakdown is as follows.

Clicker Questions: 15%

There will be in-class clicker questions that require critical thinking about the material covered during that class. Some clicker questions will be for participation marks only - you will get the same mark no matter what you answer. Other questions will have a grade associated with correctness. These questions will require that you are familiar with the material and have been keeping up with reading the textbook. Students who do not keep up with pre-reading the textbook pages may be at a disadvantage for these questions.

Weekly Quizzes: 30%

There will be five quizzes throughout the course, at the end of every major topical section of material, that cover the major concepts from that section. These quizzes will be comprised of a combination of multiple choice questions and short answer questions. Some questions may involve simple mathematics to solve, but the method for solving them will be covered in the lecture component of the course.

In the case that you must miss a quiz due to illness or emergency, the grade weight for that quiz will be redistributed half over the other quizzes, and half to the final exam. Students that are having significant difficulties with the material are encouraged to come see me during office hours. If the provided office hours do not work, accommodation can be made. Let me know as soon as possible, though, as I will not be able to accommodate last minute requests.

Laboratory Activities: 25%

There are a total of five labs held throughout this course. These are experiential sessions to provide students with a hands-on understanding of the material. More information about the labs is provided in the lab manual that students must have for the course.

Final Exam: 30%

The exam will be 2 hours long and administered in the lecture hall. Students will be required to bring a calculator, but all equations will be provided on an accompanying formula sheet. The material of the final exam will be comprehensive of the material covered in the course, and the questions will be similar in style and scope to those in the quizzes.

University Regulations on Academic Integrity

These regulations are reproduced from <http://web.uvic.ca/calendar2011/FACS/UnIn/UARe/PoAcI.html>. For full information, including procedures for dealing with academic integrity infringement, see the webpage linked above.

Academic integrity requires commitment to the values of honesty, trust, fairness, respect, and responsibility. Any action that contravenes this standard, including misrepresentation, falsification or deception, undermines the intention and worth of scholarly work and violates the fundamental academic rights of members of our community.

Several types of academic integrity violations are covered in brief below.

Plagiarism

A student commits plagiarism when he or she:

- submits the work of another person as original work
- gives inadequate attribution to an author or creator whose work is incorporated into the student's work, including failing to indicate clearly the inclusion of another individual's work
- paraphrases material from a source without sufficient acknowledgement as described above

Students who are in doubt as to what constitutes plagiarism in a particular instance should consult their course instructor.

Falsifying Material Subject to Academic Evaluation

Falsifying materials subject to academic evaluation includes, but is not limited to:

- fraudulently manipulating laboratory processes, electronic data or research data in order to achieve desired results
- using work prepared by someone else (e.g., commercially prepared essays) and submitting it as one's own
- citing a source from which material was not obtained
- using a quoted reference from a non-original source while implying reference to the original source
- submitting false records, information or data, in writing or orally

Cheating on Assignments, Tests/Quizzes and Examinations

Cheating includes, but is not limited to:

- copying the answers or other work of another person
- sharing information or answers when doing take-home assignments, tests and examinations except where the instructor has authorized collaborative work
- having in an examination or test any materials or equipment other than those authorized by the examiners impersonating a candidate on an examination or test, or being assigned the results of such impersonation
- *assisting others to engage in conduct that is considered cheating*

I will be using software to analyze student responses on the reading assignments and quizzes to ensure that student responses are sufficiently unique.