

DEPARTMENT OF PHYSICS, ENGINEERING AND ASTRONOMY

COURSE OUTLINE

ASTR 111
INTRODUCTORY ASTRONOMY:
The Solar System

INSTRUCTOR:	Greg Arkos		
OFFICE:	Building 315, Room 209		
OFFICE HOURS:	TR 1:00 pm - 2:30 pm <i>or by appointment</i>		
PHONE:	(250) 753-3245 & ask to be transferred to me OR MS Teams calling		
EMAIL:	gregory.arkos@viu.ca		
WEBSITE:	https://wordpress.viu.ca/arkosg/		
VIULEARN:	https://learn.viu.ca		
LECTURE:	TR	2:30 pm – 4:00 pm	Bldg 315, Rm 216
LAB:	R (bi-weekly)	6:00 pm – 8:00 pm	Bldg 315, Rm 216/113
TEXTBOOK:	Universe: The Solar System by R. Freedman & W.J. Kaufmann (5th Ed, WH Freeman & Co.) is optional . Planetarium software is required . A free Astronomy reference text is also available online via <i>OpenStax.org</i> .		
CALENDAR DESCRIPTION:	Introduction to fundamental principles in astronomy. Topics include geocentric vs. heliocentric astronomy, the celestial sphere, navigating the night sky, tides and eclipses, and a detailed examination of the planets and other solar system objects. Includes a bi-weekly lab and observing sessions, weather permitting. (3:0:1)		
OBJECTIVES & LEARNING OUTCOMES:	Astronomy 111 covers topics such as the nature of science, astronomical coordinates, navigating the night sky and the formation & properties of the Earth and other solar system objects, including the planets, asteroids and comets. The course aims to provide students with an appreciation of the universe and our place within it, stressing conceptual understanding with minimal mathematical derivation. Quizzes and exams emphasize descriptive material and an understanding of (and connections between) course concepts. By the end of the course students should understand the fundamental nature of scientific investigation, be able to identify & differentiate between various classes of solar system objects, recognize & predict the appearance and occurrence of lunar phases, understand the underlying mechanics and nature of the various types of eclipses, discuss conditions leading to the development of Earth-like planets, and be able to compare & contrast characteristics of major solar system objects. Completing the observing project and outdoor observing sessions should enable students to identify asterisms, constellations & other significant celestial objects and navigate the night sky.		
PREREQUISITES:	Minimum “C+” in one of Pre-calculus 12, MATH 145 or MATH 152.		

**** Please read ALL of the important course details & policies which follow. ****

STUDENT RESPONSIBILITIES: Read this course outline *carefully*; it is assumed that you are **fully aware** of its contents with regards to dates & deadlines, evaluation and policies. You are responsible for keeping up with material presented in lecture and monitoring your progress in the course. *Please speak with me **immediately** if you are having difficulties which might impact your grade in the course.*

OFFICE HOURS: I will be available for face-to-face meetings on a drop-in or by-appointment basis in my office during the formal office hours listed above. You may also reach me via the provided email and phone number both during and outside of my office hours. It is also possible to arrange individual or small-group meetings via Microsoft Teams (see the link on the course website).

LABS & OBSERVING SESSIONS: Students in astronomy will be expected to perform a number of astronomy related laboratory experiments over the course of the term; some of these will be computer based. Observing sessions take place (weather permitting) during the semester. ***** Dates and times for observing sessions are TBD. *****

OBSERVING PROJECT: The observing project is done individually and utilizes computer simulations & TBD VIU rooftop observation sessions. Details are available on the course website. ***** Late projects will NOT be accepted. *****

EVALUATION:

Term Test #1 (in lab period)	30%
Term Test #2 (exam period)	30%
Quizzes (best 5 of 6)	10%
Laboratory (5)	20%
Observing Project	10%

GRADES: Final grades are assigned using the *VIU Institutional Grade Scale*:

A+	90-100%	B+	76-79%	C+	64-67%	D	50-54%
A	85-89%	B	72-75%	C	60-63%	F	0-49%
A-	80-84%	B-	68-71%	C-	55-59%		

FAILING GRADES: Students worried about poor grades should speak with me as soon as possible. Please see the [online](#) VIU Calendar regarding registration related policies. ***** The last day for academic penalty-free voluntary withdrawal is below. *****

ACADEMIC INTEGRITY & POLICIES Academic misconduct can have **significant** repercussions on your academic career and is taken **very seriously** at VIU. Details of VIU's General Regulations, Policy 96.01 and Procedure 96.01.001 are available from: <https://www.viu.ca/registration/general-regulations>, <https://learningmatters.viu.ca/ready-set-go/academic-integrity>

GENERATIVE ARTIFICIAL INTELLIGENCE: Students are expected to submit their *own work & ideas for this course*; the *usage and scope of ANY form of AI generated content or imagery* in submitted work **MUST** be pre-approved by the instructor & fully referenced.

EDI & CODE OF CONDUCT: VIU values human diversity in all its dimensions and is committed to achieving and ensuring learning and working environments that are equitable, diverse and inclusive. *It is expected that students will treat one another and the instructor with respect and dignity at all times, without exception.*

ACCESSIBILITY SERVICES: VIU's Accessibility Services provides information, support services and reasonable accommodation to students with documented permanent and temporary disabilities, such as mental health conditions, ADHD, learning disabilities, chronic health issues, hearing and visual impairments, physical disabilities and temporary impairments due to accident, illness or injury.

If you have a condition requiring academic accommodations for this course please contact Accessibility Services at viu.ca or visit them in BLDG 255. **** If you are already registered with AS please provide me with your accommodation letter, either in person or by email. ****

It is the student's responsibility to be aware of & meet all AS deadlines!

**** IMPORTANT course policies – PLEASE READ CAREFULLY ****

- 1 Concerns regarding graded material MUST be raised within a week of its return.
- 2 Late submissions will NOT be accepted for grading WITHOUT prior approval.
- 3 There are NO deferred or make-up quizzes for this course.
- 4 There will be NO “extra” or “make-up” work for this course.
- 5 Requests for exam deferments REQUIRE official supporting documentation.
- 6 Students MUST be available for the entire term, eg. the ENTIRE final exam period.
- 7 There will be NO accommodation of non-university related travel, eg. vacations.
- 8 There is ZERO tolerance for academic dishonesty, including plagiarism.

IMPORTANT DATES:

“ROCK VIU” ORIENTATION: September 8, 2026
 FIRST DAY OF CLASSES: September 9, 2026
 MONDAY SCHED ON TUESDAY: October 13, 2026
 WITHDRAWAL DEADLINE: November 30, 2026
 LAST DAY OF CLASSES: December 11, 2026
 FINAL EXAMINATIONS: December 14 – 22, 2026

HOLIDAYS: (No classes, labs or exams)

LABOUR DAY: September 7, 2026
 TRUTH & RECONCILIATION: September 30, 2026
 THANKSGIVING: October 12, 2026
 REMEMBRANCE DAY: November 11, 2026
 STUDY DAYS: November 9 – 13, 2026

TENTATIVE QUIZ, EXAM & OBSERVING PROJECT DATES:

Quiz 1	Intro, History	Sept 17
Quiz 2	Coords, Sky, Star Motions Navigating the Sky	Oct 1
Quiz 3	Seasons, Moon Phases, Eclipses	Oct 15
Term Test #1	Intro – Solar System	Oct 29
Quiz 4	Earth, Earth-Moon system	Nov 5
Quiz 5	Moon, Mercury, Venus, Mars	Nov 19
Observing Project	due on VIULearn	Nov 20
Quiz 6	Jupiter, Saturn, Uranus, Neptune, Pluto, TNOs	Dec 10
Term Test #2	Earth – Asteroids/Meteors/Comets	Final Exam period

TENTATIVE LAB DATES:

Lab 1: Skycharts	Sept 17
Lab 2: Gravitation & planetary motion	Oct 1
Lab 3: Moon Phases & eclipses	Oct 15
Lab 4: Mars Lander	Nov 5
Lab 5: Moons of Jupiter	Nov 19

TOPICS: The following is a *tentative* list of topics that will be covered in this course.

<u>Subject</u>	<u>Chapter(s) in text</u>
Introduction	1
History	2, 4
Kepler, Newton & gravitation	4
The Sky, constellations, star motions, navigating the sky, seasons	2
Moon phases, eclipses	3
Solar system formation	7, 8
Earth, Earth-Moon system, Moon	9, 10
Mercury, Venus & Mars	11
Jupiter & Saturn	12, 13
Uranus, Neptune & Pluto	14
Asteroids, Meteors & Comets	15

**** NOTE:** *Circumstances may require modifications to the topics in this outline. ***