

COURSE SYLLABUS



COURSE TITLE: ASTR-101: Astronomy: Night Sky and Planets

CLASS SECTION: 001

TERM: 2023W

COURSE CREDITS: 4

DELIVERY METHOD(S): Face-to-face (T W Th, 9:30-11:20 am)

Camosun College campuses are located on the traditional territories of the Lək̓ʷəŋən and W̱SÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here. Learn more about Camosun's [Territorial Acknowledgement](#).

For COVID-19 information please visit <https://legacy.camosun.ca/covid19/index.html>.

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable explanation in advance, you will be removed from the course and the space offered to the next waitlisted student.

INSTRUCTOR DETAILS

NAME: Dr. James Nemec

EMAIL: nemec@camosun.ca

OFFICE: Fisher 340c

OFFICE HOURS: M:10:30-11:30 AM; T,W,Th:2:30-3:30PM (or by appointment)

As your course instructor, I endeavour to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me. Camosun College is committed to identifying and removing institutional and social barriers that prevent access and impede success.

CALENDAR DESCRIPTION

An introduction to Astronomy covering constellations, solar and planetary motions, lunar phases and eclipses, cosmological models, starlight and spectroscopy, telescopes, planets, and the origin and evolution of the solar system.

PREREQUISITE(S):

One of:

- C in English 11
- C in Camosun Alternative
- C in ENGL 050 (if taken prior to September 2020)

And one of:

- C in Math 10
- C in MATH 053

CO-REQUISITE(S):

Not Applicable

COURSE LEARNING OUTCOMES / OBJECTIVES

Upon completion of this course students will be able to:

1. Identify constellations and famous bright stars.
2. Describe the daily, monthly and yearly motions of the Sun, Moon, planets and stars.
3. Outline how our modern knowledge of the four forces of nature (gravity, electricity and magnetism, the strong force and the weak force) and the over 100 elements in the Periodic Table, evolved from the ancient idea that there are two forces (gravity and levity) and four elements (earth, water, air and fire).
4. Summarize Kepler's Laws describing the motion of the Moon and planets, Newton's Laws of motion and gravity, Maxwell's Laws concerning electricity and magnetism, and the basic laws of light and matter.
5. Describe how optical, radio and other telescopes work.
6. Summarize the composition, structures and atmospheres of the planets.
7. Describe the giant planets Jupiter, Saturn, Uranus and Neptune and their many satellites.
8. Describe and draw logical conclusions about the history of the debris in the solar system: meteorites (stony and iron) and asteroids, the asteroid belt, objects (such as Pluto) in the Kuiper belt, and comets (for example, Halley's comet).
9. Describe a scientific model for the formation and evolution of the solar system that successfully accounts for the many observed properties and systematic features, such as why all the planets revolve around the Sun in the same direction, and why all the major planets orbit in a flat plane.
10. Assemble experimental apparatus (telescope), make observations of sky, analyze and interpret data to test astronomical hypotheses and complete written laboratory reports.

REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

- (a) Textbook: OPENSTAX ASTRONOMY (available from web, open source)
- (b) Notebook: needed for making Study Notes
- (c) Pocket calculator, ruler, protractor, compass, graph paper
- (d) Software program "Stellarium" (open source, free on internet)
- (e) CLEA (Contemporary Lab Exercises in Astronomy) open-source software (can be downloaded to computers running Windows operating systems -- if you are using Linux/Apple/Android operating systems then it is possible to run the software remotely using the Camosun computers)

COURSE SCHEDULE, TOPICS, AND ASSOCIATED PREPARATION / ACTIVITY / EVALUATION

The following schedule and course components are subject to change with reasonable advance notice, as deemed appropriate by the instructor.

WEEK (DATE RANGE)	ACTIVITY or TOPIC	OTHER NOTES
1 (Jan.9-13)	Introduction (Chapter 1) and Observing the Sky (Chap.2)	
2 (Jan.16-20)	Observing the Sky (Chapter 2)	
3 (Jan.23-27)	Earth, Moon and Sky (Chapter 4)	
4 (Jan.30-Feb.3)	Copernicus, Tycho, Kepler and Galileo: Orbits and Gravity (Chapter 3)	
5 (Feb.6-10)	Review and Midterm #1 – Thursday, Feb.9	
6 (Feb.13-17)	Newton; Light, Spectra and Telescopes (Chapters 5-6)	Feb.17 Final Exam Schedule posted
7 (Feb.20-24)	Family Day and Reading Break the week of Feb.20-24	
8 (Feb.27-Mar.3)	Introduction to Solar System (Chapter 7); Earth (Chap.8)	
9 (March 6-10)	Comets and Asteroids (Chapter 13) Midterm#2 – Thursday, March 9,2023i	
10 (March 13-17)	Moon & Mercury (Chapter 9); Venus & Mars (Chapter 10)	
11 (March 20-24)	The Giant Planets (Chapter 11)	
12 (March 27-31)	Rings, Moons and Pluto (Chapter 12)	
13 (April 3-6)	Origin of Solar System (Chapter 14) and Exoplanets	Apr.7 Good Friday (college closed)
14 (April 11-14)	Exoplanets and Review	Apr.10 Easter Monday (college closed)
	Final Exam in exam period: April 17-25,2023	

Students registered with the Centre for Accessible Learning (CAL) who complete quizzes, tests, and exams with academic accommodations have booking procedures and deadlines with CAL where advanced noticed is required. Deadlines can be reviewed on the [CAL exams page](http://camosun.ca/services/accessible-learning/exams.html). <http://camosun.ca/services/accessible-learning/exams.html>

EVALUATION OF LEARNING

DESCRIPTION	WEIGHTING
Labs	30%
Study Notes, Assignments, Quizzes and Homeworks	10%
Midterm#1	15%
Midterm#2	15%
Final Exam	30%
Total	100%

If you have a concern about a grade you have received for an evaluation, please come and see me as soon as possible. Refer to the [Grade Review and Appeals](#) policy for more information.
<http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf>

COURSE GUIDELINES & EXPECTATIONS

SCHOOL OR DEPARTMENTAL INFORMATION

STUDENT RESPONSIBILITY

Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

SUPPORTS AND SERVICES FOR STUDENTS

Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit <http://camosun.ca/students/>.

Academic Advising	http://camosun.ca/advising
Accessible Learning	http://camosun.ca/accessible-learning
Counselling	http://camosun.ca/counselling
Career Services	http://camosun.ca/coop
Financial Aid and Awards	http://camosun.ca/financialaid
Help Centres (Math/English/Science)	http://camosun.ca/help-centres
Indigenous Student Support	http://camosun.ca/indigenous
International Student Support	http://camosun.ca/international/
Learning Skills	http://camosun.ca/learningskills
Library	http://camosun.ca/services/library/
Office of Student Support	http://camosun.ca/oss
Ombudsperson	http://camosun.ca/ombuds
Registration	http://camosun.ca/registration
Technology Support	http://camosun.ca/its
Writing Centre	http://camosun.ca/writing-centre

If you have a mental health concern, please contact Counselling to arrange an appointment as soon as possible. Counselling sessions are available at both campuses during business hours. If you need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

COLLEGE-WIDE POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

Academic Accommodations for Students with Disabilities

The College is committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, depression, learning, etc). If you have a disability, the [Centre for Accessible Learning](#) (CAL) can help you document your needs, and where disability-related barriers to access in your courses exist, create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate academic accommodations you need without disclosing your diagnosis or condition to course instructors. Please visit the CAL website for contacts and to learn how to get started:

<http://camosun.ca/services/accessible-learning/>

Academic Integrity

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.pdf> for policy regarding academic expectations and details for addressing and resolving matters of academic misconduct.

Academic Progress

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

Course Withdrawals Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <http://camosun.ca/learn/fees/#deadlines>.

Grading Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for further details about grading.

Grade Review and Appeals

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

Mandatory Attendance for First Class Meeting of Each Course

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable reason in advance, you will be removed from the course and the space offered to the next waitlisted student. For more information, please see the "Attendance" section under "Registration Policies and Procedures"

(<http://camosun.ca/learn/calendar/current/procedures.html>) and the Grading Policy at

<http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>.

Medical / Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.

Sexual Violence and Misconduct

Camosun is committed to creating a campus culture of safety, respect, and consent. Camosun's Office of Student Support is responsible for offering support to students impacted by sexual violence. Regardless of when or where the sexual violence or misconduct occurred, students can access support at Camosun. The Office of Student Support will make sure students have a safe and private place to talk and will help them understand what supports are available and their options for next steps. The Office of Student Support respects a student's right to choose what is right for them. For more information see Camosun's Sexualized Violence and Misconduct Policy: <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.9.pdf> and camosun.ca/sexual-violence. To contact the Office of Student Support: oss@camosun.ca or by phone: 250-370-3046 or 250-3703841

Student Misconduct (Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College's Student Misconduct Policy at <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf> to understand the College's expectations of academic integrity and student behavioural conduct.

Changes to this syllabus: Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.