



CAMOSUN COLLEGE
School of Arts & Science
Department of Physics & Astronomy

ASTR-101-D02
Astronomy: Night Sky and Planets
Fall 2020

COURSE OUTLINE

The course description is online @ <http://camosun.ca/learn/calendar/current/web/astr.html>

* Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.

1. Instructor Information

(a) Instructor	Dr. James Nemec
(b) Office hours	Tuesdays from 8:30 to 10:30 am (D02) and 2:30 to 4:30 pm (D01)
(c) Location	Blackboard Collaborate Ultra (available through D2L, direct link, phone)
(d) Phone	Alternative: _____
(e) E-mail	nemec@camosun.ca
(f) Website	_____

2. Intended Learning Outcomes

Upon completion of this course the student 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.

3. Required Materials

- (a) Textbook (open-source): OPENSTAX ASTRONOMY (available from OPENSTAX website)
- (b) Notebook for Lecture and other Study Notes
- (c) Pocket calculator, protractor, compass, ruler
- (d) Working version of open-source (free) software program “Stellarium”
- (e) Working versions of CLEA (Contemporary Lab Exercises in Astronomy) open-source software (can be downloaded to computers running Windows operating system -- if you are using the Linux/Apple/Android o/s then it is possible to run the software remotely using the Camosun computers)

4. Course Content and Schedule

The course will mainly be asynchronous. The main delivery will be through e-mails that will give instruction on doing homework, completing labs, watching videos etc. The work can be done at any time but there will usually be stated deadlines. Any submissions after we have gone over the answers will not be accepted.

Every Tuesday, from 8:30 to 10:30 (for Section D02) and from 2:30 to 4:30pm (for Section D01) there will be a Blackboard Collaborate meeting to elaborate on the e-mails and to discuss the course material. Since a major part of the course is understanding the night and daytime sky there will be some outside observing required, either drawing what is observed or picture-taking (astrophotography).

The Astr101 course material will be drawn from Chapters 1-14 in the OPENSTAX Astronomy textbook.

The main videos that will be assigned for viewing will be drawn from the PBS Crash Course in Astronomy. The OPENSTAX textbook also has a set of Powerpoint (PPT) Image Slideshows, a set of Video Lectures, and a list of “Brief Astronomy Videos” Another useful source of information is the “iLectureOnline” set of “Astronomy 101” lectures.

Approximate Schedule: In September and October (up until the Midterm) we will cover Chapters 1-6 of the OPENSTAX textbook; after the Midterm we will cover chapters 7-14.

Midterm (D02) on Tuesday, October 20, 2020 from 8:30-10:30

Final Exam – to be held in the Final Exam period in December 2020

The exams must be written at the stated times since there will be no make-up exams.

5. Basis of Student Assessment (Weighting)

- (a) Labs (30%),
- (b) Assignments and Homework (30%)
- (c) Review Quizzes (10%)
- (d) Exams: There will be a Midterm exam (which will count 10% toward the course grade) and a Final exam (which will count 20% toward the course grade).

6. Grading System

Standard Grading System (GPA)

Competency Based Grading System

7. Recommended Materials to Assist Students to Succeed Throughout the Course

8. College Supports, Services and Policies



Immediate, Urgent, or Emergency Support

If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @ <http://camosun.ca/about/mental-health/emergency.html> or <http://camosun.ca/services/sexual-violence/get-support.html#urgent>

College Services

Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at <http://camosun.ca/>

College Policies

Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at <http://camosun.ca/about/policies/>. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence and Misconduct, Student Ancillary Fees, Student Appeals, Student Conduct, and Student Penalties and Fines.

A. GRADING SYSTEMS <http://camosun.ca/about/policies/index.html>

The following two grading systems are used at Camosun College:

1. Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D		1
0-49	F	Minimum level has not been achieved.	0

2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.
NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.

B. Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at <http://camosun.ca/about/policies/index.html> for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	<i>In progress:</i> A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	<i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.