

## COURSE OUTLINE

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

Ω Please note: the College electronically stores this outline for five (5) years only.  
It is **strongly recommended** you keep a copy of this outline with your academic records.  
You will need this outline for any future application/s for transfer credit/s to other colleges/universities.

### 1. Instructor Information

|     |               |  |                    |  |
|-----|---------------|--|--------------------|--|
| (a) | Instructor:   | Dr. James Nemec  |                    |  |
| (b) | Office Hours: | 2:00-2:30pm M and W; 11-11:30am and 2:30-3:30pm T and Th |                    |  |
| (c) | Location:     | Fisher 346d  |                    |  |
| (d) | Phone:        | 250-370-3460   | Alternative Phone: |  |
| (e) | Email:        | <a href="mailto:nemec@camosun.ca">nemec@camosun.ca</a>   |                    |  |
| (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. Explain the scientific method, as illustrated by the development of the geocentric and heliocentric models of the universe, and describe how the Greeks deduced that the Earth and Moon are spheres and estimated their relative sizes, distances, etc.
4. 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).
5. Summarize Kepler's Laws describing the motion of the planets around the Sun, Newton's Laws of motion and gravity, the basic relationship between electricity and magnetism (the Oersted and Faraday laws), and the basic laws of light and matter.
6. Describe how optical, radio and other telescopes work.
7. Summarize the composition and structures of the planets, and explain why the inner planets all have solid surfaces while the outer planets do not. Also, explain why Venus and Earth have atmospheres but Mercury and Mars do not.
8. Describe the giant planets Jupiter, Saturn, Uranus and Neptune and their many satellites.
9. 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).
10. 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.
11. Assemble simple experimental apparatus using written instructions.
12. Observe, record, organize and display data in tables, graphs or charts.
13. Analyze linear graphs (determine area, slope, intercept, etc.).
14. Interpret meaning of experimental results in the context of the experimental objectives.

### 3. Required Materials

- (a) The Cosmic Perspective, Bennett et al. 6<sup>th</sup> or 7<sup>th</sup> Edition
- (b) Galileoscope (available in Bookstore)
- (c) pocket calculator

### 4. Course Content and Schedule

The first midterm will be held during the first week of October, the second midterm will be held during the first week of November, and the 3-hour final exam will be held in the December exam period.

## 5. Basis of Student Assessment (Weighting)

(This section should be directly linked to the Intended Learning Outcomes.)

- (a) Assignments and Labs – 30%
- (b) Quizzes – 10%
- (c) Exams – two midterms, 15% each; final exam 30%
- (d) Other (e.g., Attendance, Project, Group Work)

## 6. Grading System

### 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     | Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite. | 1                       |
| 0-49       | F     | Minimum level has not been achieved.  | 0                       |

### 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 E-1.5 at [camosun.ca](http://camosun.ca) 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, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. (For these courses a final grade will be assigned to either the 3 <sup>rd</sup> course attempt or at the point of course completion.) |
| 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.  |

## 7. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

### LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College calendar, at Student Services, or the College web site at [camosun.ca](http://camosun.ca).

### STUDENT CONDUCT POLICY

There is a Student Conduct Policy **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services, and the College web site in the Policy Section.