

CAPILANO UNIVERSITY COURSE OUTLINE	
Term: FALL 2013	Course No. ASTR 106
Course: INTRODUCTION TO ASTRONOMY	Credits: 3.0 Section:
INSTRUCTOR: TBA Office: TBA Tel: 604-986-1911 (Ext. TBA) email: tba@capilanou.ca web:	

COURSE FORMAT: Three hours of class time plus an additional hour of supplemental activity delivered through on-line or other activities for a 15 week semester, which includes two weeks for final exams.

PRE-REQUISITES: Pre-Calculus 12, or Principles of Math 12, or Pre-Calculus 11 with a minimum B grade, or Principles of Math 11 with a minimum B grade, or Foundations of Mathematics 11 with a minimum A grade, or BMTH 053/054, or MATH 105. MATH 105 may be taken concurrently.

COURSE OBJECTIVES:

General:

The student will:

- learn about the evolution and composition of the universe
- study the techniques used by astronomers in studying the universe
- realize that modern astronomy is not a collection of facts, but rather is a physical science based upon the principles of physics
- learn about the relationships between observations and theories from an historical perspective

**Student Learning
Outcomes:**

Upon successful completion of this course, the student should be able to:

- appreciate and understand the laws and principles of physics that underlie both the behaviour of celestial bodies and the means by which they are observed;
- apply the laws and principles of physics in solving appropriate problems;
- observe and have some familiarity with the night sky and be able to work with “virtual astronomy” software packages; and
- understand the significance of media reports on new astronomical discoveries and hypotheses.

REQUIRED COURSE MATERIALS:

Textbook: Bennett, Jeffrey, et al. The Cosmic Perspective (including Mastering Astronomy and SkyGazer 5.0). 7th ed. San Francisco: Pearson, 2014.
Capilano University Physics Lab Notebook

i>clicker remote: Available from the Capilano University Bookstore
(Rebate coupon enclosed with textbook)

COURSE CONTENT: (Tentative)

Topic	Weeks (approx)	Chapter(s)
Introduction, overview, Big Bang, our place in the universe, the night sky	2.0	1, 2, parts of S1
Scientific method and the science of astronomy, Historical development, Kepler's laws	0.5	3
Motion, Newton's laws, momentum, angular momentum, energy, gravitation, Kepler's laws revisited	2.0	4
Light, photons, electromagnetic waves, properties of matter, spectra, Doppler effect	2.0	5
Observing the universe: telescopes and spacecraft	0.5	6
Our Sun and Solar System, extrasolar planets	2.5	7, 8, 13, 14
Stars: luminosity, Hertzsprung-Russell Diagrams, star clusters, stellar evolution, origin of elements, white dwarfs, neutron stars, black holes	2.5	15, 16, 17, 18
Mid-Term Exams (2)	1.0	

EVALUATION PROFILE:

Final grades for the course will be computed based on the following schedule:

Midterms (2)	25%
Assignments and Homework	10%
In-class work	5%
Project	15%
Final Exam	35%
Performance Evaluation	10%
TOTAL	100%

In order to pass the course, students must receive a minimum total of 27/60 for the midterm and final exam components of the evaluation.

PERFORMANCE EVALUATION:

In the absence of exceptional circumstances, which are at the instructor's discretion, the performance evaluation component of the final grade will be prorated to the rest of the grade. For example, a 10% performance evaluation component would be determined by dividing the remaining mark out of 90 by 9. The most common circumstance justifying an increased performance evaluation mark is a student's improved performance in the final examination relative to the midterm exam(s), which the instructor feels justifies an elevated letter grade.

SUPPLEMENTAL 4TH HOUR ACTIVITY:

The supplemental 4th hour activity may include tutorials, on-line activities, a group meeting, lab-like work or some other activity as indicated by your instructor.

GRADING PROFILE:

Letter grades will be assigned according to the following guidelines:

A+ 90 - 100%	B+ 77 - 79%	C+ 67 - 69%	D 50 - 59%
A 85 - 89%	B 73 - 76%	C 63 - 66%	F 0 - 49%
A- 80 - 84%	B- 70 - 72%	C- 60 - 62%	

Students should refer to the University Calendar for the effect of the above grades on grade point average.

OPERATIONAL DETAILS:***University Policies:***

Capilano University has policies on Academic Appeals (including appeal of final grade), Student Conduct, Cheating and Plagiarism, Academic Probation and other education issues. These and other policies are available on the University website.

Attendance:

Strongly recommended, as class work and examination success require regular attendance, as does consideration for special arrangements due to missed exams, etc. (see section below).

Missed Exams:

Normally, a score of zero will be given for a missed exam, test, quiz, lab, etc. In some exceptional situations, the student will be permitted to write a make-up test, defer the lab to a later date or to replace the score by other marks.

The situations in which a score of zero may be avoided are those for which the student meets **all** of the following conditions:

1. Circumstances are beyond the control of the student which resulted in the exam, test, quiz, lab, etc. to be missed. Such circumstances include serious illness or injury, or death of close family member. They do **NOT** include forgetting about the test, lack of preparation for the test, work-related or social obligations.
2. The student has notified the instructor (or the Pure and Applied Sciences office staff, if the instructor is not available) about the missed exam, test, quiz, lab, etc. Such notification **MUST** occur in advance, if possible, or at the latest, on the day of the exam, test, quiz, lab, etc.
3. Proof of the circumstances must be provided. Proof of illness or injury requires a note from a doctor, who may also be consulted.
4. The student has been fully participating in the course up until the circumstances that prevented the writing of the exam, test, quiz, lab, etc. **Fully participating means attending almost all classes and turning in almost all assignments in the course.**

The options offered to the student who meets the four conditions are decided by the instructor. They will not necessarily meet the convenience of the student.

Final Exam Period:

Students should note that the final exam period is from **(dates TBA)**, and that they can expect to write exams at any time during this period. Individual exam times will not normally be rescheduled because of holidays, work, or other commitments. While efforts are made to spread exams throughout the exam period, an individual's particular course combination may result in exams being scheduled close together, or spread widely through the entire exam period.

Cheating/Plagiarism:

Students caught cheating on a test will normally receive a grade of "F" on the course and may be expelled from the University. Plagiarism (including the copying of any part of assignments, laboratory reports, and essays) is a serious offence and is a form of cheating.

Incomplete Grades:

Incomplete grades ("I") are given only when special arrangements have been agreed upon with the instructor prior to the end of the semester. Since "I" grades are granted only in exceptional circumstances (usually health problems), their occurrence is rare. A student receiving an "I" grade should see the instructor.

English Usage:

Students are expected to use correct standard English in their written and oral assignments, exams, presentations and discussions. Failure to do so may result in reduced grades in any part of the Evaluation Profile. Please refer to the

guidelines provided in the Capilano Guide to Writing Assignments (available from the University bookstore).

***Emergency
Procedures:***

Please read the emergency procedures posted on the wall of the classroom.