

UNIVERSITY OF CALGARY
DEPARTMENT OF PHYSICS and ASTRONOMY
COURSE OUTLINE

1. **ASTR 207, Introduction to Astronomy - The Solar System**

Lecture Sections:

L01: TuTh, 15:30-16:45, ST 148 **Dr. J. M. Stil, Office SB519** 403-220-8015, stil@ras.ucalgary.ca, Office Hours: W 14:00-16:00

Course Documents will be posted on blackboard: <http://blackboard.ucalgary.ca>

Department of Physics and Astronomy, Science B SB605, 403-220-5385, office@phas.ucalgary.ca

2. **PREREQUISITES:** None. Not open to students with credit in ASTR 205 or ASTR 211.

3. **GRADING:** The University policy on grading and related matters is described sections F.1 and F.2 of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Web Assignments (8)	25%	
Midterm test	25%	(2 November 2010 during class)
Clickers	3%	(1% participation, 2% answers)
Web-based astronomy concept tests	2%	(1% participation each for pre and post test)
Final Examination	45%	(To be scheduled by the Registrar)

A passing grade for the final examination is required to pass the course. Students who fail the final examination should expect a grade not higher than D+ for the course, no matter what the average grade is for the other course components.

Percentage grades will be given for all elements of term work and examinations. A weighted course percentage will be calculated for each student after the final exam is written. A table of conversion from final course percentage to final course letter grade can be found on page 4 of this course outline.

4. **Missed Components of Term Work.** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in section 3.6: <http://www.ucalgary.ca/pubs/calendar/current/sc-3-6.html>. It is the student's responsibility to familiarize himself/herself with these regulations. See also <http://www.ucalgary.ca/pubs/calendar/current/e-3.html>.

5. There are no scheduled class activities outside regular class time for this course.

REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY. If you have a clash with this out-of-class-time-activity, please inform your instructor as soon as possible so that alternative arrangements may be made for you.

6. **TEXTBOOK:** The Cosmic Perspective – The Solar system (6th edition). Authors: Bennett, Donahue, Schneider & Voit. Publisher: Addison-Wesley. ISBN: 978-0-321-63366-8. **WARNING: Be Sure to buy the Solar System edition of this book, or the complete edition that includes all chapters.**

7. **EXAMINATION POLICY:**

Calculators are allowed on exams. Use of calculator programs on devices with wireless capability is strictly forbidden. Students are encouraged to read the Calendar, Section G, on Examinations: <http://www.ucalgary.ca/pubs/calendar/current/g.html>.

8. Students who buy a new copy of "The Cosmic Perspective – The Solar System" (6th edition) will find an access kit included with the textbook. Students who do not have a new copy of the textbook will have to buy an access kit separately at the University of Calgary bookstore. ASTR 207 uses classroom participation devices (clickers). Students are required to purchase a clicker, and pay the registration fee at the Einstruction.com website (not included in the price of a new clicker).

9. Student's essay writing skills will not be considered in the evaluation of this course. Students are required to hand in a practical assignment that will be graded on clarity of reporting, conciseness and completeness of information. See also <http://www.ucalgary.ca/pubs/calendar/current/e-2.html>.

10. If you agree, your course work may be used for research purposes. Your responses will remain anonymous and confidential. Grouped data (no individual responses) may be used in academic presentations and publications. Participation in such research is voluntary and will not influence grades in this course. Student's signed consent forms will be withheld from instructors until after final grades are submitted. More information will be provided at the time student participation is requested. See also <http://www.ucalgary.ca/pubs/calendar/current/e-5.html>.

Department Approval

Date

Oct 12 / 2010

Associate Dean's Approval for
out of regular class-time activity: _____ Date: _____

11. OTHER IMPORTANT INFORMATION FOR STUDENTS:

- (a) **ACADEMIC MISCONDUCT** (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under K. Student Misconduct (<http://www.ucalgary.ca/pubs/calendar/current/k.html>) to inform yourself of definitions, processes and penalties
- (b) **ASSEMBLY POINTS** in case of emergency during class time. Be sure to **FAMILIARIZE YOURSELF** with the information at <http://www.ucalgary.ca/emergencyplan/assemblypoints>.
- (c) **ACADEMIC ACCOMMODATION POLICY.** Students with documentable disabilities are referred to the following links:
Calendar entry on students with disabilities: <http://www.ucalgary.ca/pubs/calendar/current/b-1.html>
Disability Resource Centre: <http://www.ucalgary.ca/drc/>
- (d) **SAFEWALK:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call **220-5333** for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- (e) **FREEDOM OF INFORMATION AND PRIVACY:** This course will be conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, **students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page.** For more information see also <http://www.ucalgary.ca/secretariat/privacy>.
- (f) **STUDENT UNION INFORMATION:** VP Academic **Phone:** 220-3911 **Email:** suvpaca@ucalgary.ca.
SU Faculty Rep. **Phone:** 220-3913 **Email:** sciencerep@su.ucalgary.ca **Website** <http://www.su.ucalgary.ca/home/contact.html>.
Student Ombudsman: <http://www.su.ucalgary.ca/services/student-services/student-rights.html>
- (i) **INTERNET and ELECTRONIC COMMUNICATION DEVICE Information.** You can assume that in all classes that you attend, **your cell phone should be turned off.** Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

Additional Reading and Reference Books (voluntary):

"The Grand Tour. A Traveller's Guide To The Solar System", R. Miller & W. K. Hartmann,
Workman Publishing, NY

Additional Information on Exams:

All exams are closed book. Calculators are allowed on all exams including the final. **Use of calculator programs on cell phones or other devices with wireless capability is strictly forbidden.** The final exam date and time are scheduled by the Registrar's Office. ***The midterm exam will be held during regular class time on Tuesday, Nov 2 2010. All exams are cumulative.***

The midterm exam and the final exam will cover **every part of the course**, including sections of the text book, lectures and lecture notes posted on blackboard, and subjects covered in the assignments. This also includes topical lectures that explore subjects in more detail.

Further Information on Course Structure:

The course material will stress conceptual understanding without mathematical derivation. However, nature behaves according to mathematical and physical concepts. Therefore, ***simple math (algebra, geometry, etc.) WILL*** be occasionally used. Students can develop an appreciation for this by doing simple calculations, similar to those clearly outlined in the "Mathematical Insight" sections of the text.

From time to time, students will be asked to read sections of the text in preparation of a lecture (reading assignment), and be prepared to answer questions about the set sections at the beginning of class.

Clickers will be used in this course to increase student participation during lectures, and to probe understanding of concepts

and reading assignments.

Email to the instructor is strictly for urgent issues that do not involve the content of the course. Questions about the content of the course can be asked at the end of class, during regular office hours, or at a scheduled appointment (schedule by email or after class). Extra office hours ahead of exams will be announced in class.

Website: For up-to-date information about the course throughout the term, please visit our website in Blackboard (<http://blackboard.ucalgary.ca>)

Classroom Participation Devices (Clickers)

ASTR 207 makes use of clicker technology to improve communication between the students and the instructor, and to enhance the learning experience. Students should purchase a clicker (available at the Campus Bookstore) and register it on the website **einstruction.com**. A usage fee is charged at the time of registration that is not included in the purchase of the clicker device.

WHEN REGISTERING YOUR CLICKER YOU NEED THE CLASS KEY: G63995F624

Mastering Astronomy Web-based Assignments

Assignments in ASTR 207 will be performed using a web-based assignment system. Students who buy a new copy of "The Cosmic Perspective – The Solar System" (6th edition) will find an access kit included with the textbook. Students who do not have a new copy of the textbook will have to buy an access kit separately at the University of Calgary bookstore.

PLEASE NOTE: In addition to the numbered credit **assignments**, Mastering Astronomy includes practise tutorials on various parts of the course. These are optional, not for credit. Make use of them if you wish to do so.

1. All work on Mastering Astronomy is done on the web. Feedback is immediate. Due dates are listed below (just before midnight on Sunday evenings). Due dates are followed by a one-day grace period in which the credit for work done after the due date/time is linearly decreased to zero over 24 hours.
2. Students must register on the website given below and enter the ID number for ASTR 207. **The ID number for ASTR 207 is ASTR207UCAL2010**. You must also give a unique multi-character pass code that is found in your access kit. **Be sure to fill in all requested information** at the time of registration. Your name will then be added to an electronic grade book that will keep track of your assignment marks throughout the term. Be prepared to enter your University of Calgary ID number and your email address when you register.
3. Before attempting any of the credit assignments, you should work through the non-credit pre-assignment exercise named "Introduction to Mastering Astronomy". This will familiarize you with the data entry protocols for electronic assignment work.
4. Information about the grading of assignments is available through the Mastering Astronomy website.

Assignment Due Dates:

Assignment 1	Sunday, 3 October	23:59
Assignment 2	Sunday, 10 October	23:59
Assignment 3	Sunday, 17 October	23:59
Assignment 4	Sunday, 24 October	23:59
Assignment 5	Sunday, 7 November	23:59
Assignment 6	Sunday, 21 November	23:59
Assignment 7	Sunday, 28 November	23:59
Assignment 8	Sunday, 5 December	23:59

Grading scheme

Your Course Letter Grade for ASTR 207 will be based on the weighted average percentages of the various course components (assignments, clicker score, two in-class tests and final examination) using the weighting scheme on the first page of this course outline. The conversion from weighted average percentage to course letter grade is (minimum average scores required to obtain a letter grade):

90%	A+	75%	B+	60%	C+	47%	D+
85%	A	70%	B	55%	C	45%	D
80%	A-	65%	B-	50%	C-	<45%	F

YOU MUST PASS THE FINAL EXAM TO GET A LETTER GRADE C- OR HIGHER FOR THE COURSE

Course Syllabus

ASTR 207 (Introduction to Astronomy - the solar system) gives an overview of the solar system that includes history of astronomy, observational aspects such as time keeping, eclipses, motion of the moon and planets, planetary geology, and the formation of the solar system. ASTR207 contains some mathematics in the formulation of concepts such as angular size, time keeping, radiometric dating of the age of the solar system and Kepler's Third Law. Science literacy and the process of science will be discussed in the context of solar system science and planetary geology.

We discuss the Earth's place in the universe, and the Sun as the star of the solar system. The apparent and orbital motions of the Moon and planets are discussed, along with basic celestial coordinates, and eclipses and tides. The history of astronomy from antiquity to the modern age will be discussed. The nebular hypothesis for the formation of the solar system and the origin of terrestrial planets and gas giants will be presented. We will discuss radiometric dating of the solar system. Planetary geology will discuss similarities and differences between the terrestrial planets including different forms of tectonics, impact craters and geological age of a surface, erosion, volcanism, chemical differentiation, planetary atmospheres and magnetism. Composition, weather and magnetism of gas giants are discussed, as well as the composition and geology of the moons of the jovian planets. Small solar system objects including dwarf planets, asteroids, and comets (time permitting) are discussed. If time permits, we will also discuss other planetary systems.