UNIVERSITY OF CALGARY
DEPARTMENT OF PHYSICS AND ASTRONOMY
COURSE OUTLINE

1. **Course:** ASTR 207, Introduction to Astronomy I – The Solar System

Lecture Sections:

L01: TuTh, 15:30-16:45, ST 140 Dr. J. M. Stil, Office: Science B, SB 519, 403-220-8015, stil@ras.ucalgary.ca, Office Hours: **Wednesday 14:00 – 16:00**

If you have questions about course content, you can see the instructor at the end of class, drop in during office hours, or make an appointment (by phone or email) to meet the instructor at a different time.
Contacting the instructor by email is strictly reserved for issues related to the organization of the course, or to make an appointment. Always include your full name and student ID in your email.

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 213, or ASPH 213. Not recommended for physical science majors.

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:

Test 1 (Thursday, **October 10, 2013**)	25%	(During regular lecture time in ST 140)
Test 2 (Thursday, **November 14, 2013**)	25%	(During regular lecture time in ST 140)
Homework (6 challenge questions)	5%	(Final answers **due 23:59 on December 1**)
In-class Participation (TopHat Monocle)	3%	
Final Examination	42%	(To be scheduled by the Registrar)

A passing grade for the final exam is required in order to obtain a letter grade higher than D+ for this course. Students who do not score a passing grade on the final exam can only obtain a letter grade D+ or less for the course.

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

An extensive introduction to the course will be given during the first class. Refer to notes posted on blackboard.

Grading:
Test 1 and **Test 2** will be written during regular class time in the regular lecture theatre, ST 140. Both tests will be multiple-choice tests with a total writing time of 60 minutes. The percentage score for each test is calculated as the number of correct answers, divided by the number of questions on the test, expressed as a percentage. The scores for the tests are used in the calculation of the final course grade according to the weights listed above. University of Calgary exam regulations apply during these in-class tests. **All tests are closed-book.** Use of a calculator is recommended.

The **Final Exam** will be scheduled by the registrar. The final exam will be a 2-hour multiple-choice exam. The score for the final exam will be the calculated as the number of correct answers divided by the number of questions on the exam, expressed as a percentage. The percentage grade for the final exam will be used in the calculation of the course grade with the weight given above. Students must obtain a passing grade for the exam in order to receive a letter grade for the course higher than D+. **The exam is closed-book**. Use of a calculator is recommended.

Homework. During the course of the term, six challenge questions will be set through the TopHat Monocle system. These questions are intended to make you think, discuss, and do some on-line research. Questions will be open for answering from the time that they are posted, up to the due date. Although the questions will be made available during the course of the term, the due date for final answers to all of these questions is **23:59 on Sunday, December 1, 2013.** No extensions will be given for any reason, because there will be ample time to work on these questions

during the term. The TopHat Monocle system allows students to change their answer up to the due date. At the due date, the final answers will be collected and graded.
Grading of the challenge questions is done as follows: 1 correct answer = 1%, 2 correct answers = 2%, 3 correct answers = 3%, 4 correct answers = 4%, and 5 or 6 correct answers = 5%. This means that a score of only 5 out of 6 is required to obtain full credit for the challenge questions. Scores for the challenge questions will be calculated after the due date.

In-class participation. We will use the TopHat Monocle system during class time for in-class questions that will only be open to submit answers during the lecture in which they are presented. The grade for in-class participation will be calculated on the participation rate as follows: No answers provided: 0%. More than 1% but less than 30% of answers provided: 1%. More than 30% of answers provided, and up to 75% of answers provided: 2%. More than 75% of answers provided: 3%. The in-class participation credit does not depend on the submitted answers. The calculation of credit will commence on Tuesday, September 24, and continue until the last day of classes. In-class questions asked before September 24 will be considered practice questions that do not count for credit. See section 6 of this document for instructions if you do not own a portable device for use with TopHat Monocle in class.

A note on the use of math in ASTR 207: Some math will be used in this course. Most questions on the tests and the final exam will focus on knowledge and understanding of concepts. A few questions will require math, but remember that all questions will be multiple-choice.

A Conversion table to convert final percentage grade into a letter grade for the course is provided at the end of this document. Important: the conversion table lists the minimum percentage grade you must obtain in order to receive the listed letter grade. For example, if your percentage grade for the course, calculated from the different course components with the weights posted above, is 74%, your letter grade will be B, because the minimum percentage score to obtain a B+ is 75%.

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. It is the student's responsibility to familiarize himself/herself with these regulations. See also Section E.6 of the University Calendar

5. **Scheduled out-of-class activities:** There are no scheduled out-of-class activities associated with 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. **Course Materials:** *The Cosmic Perspective – The Solar system (7th edition). Authors: Bennett, Donahue, Schneider & Voit. Publisher: Addison-Wesley. ISBN: 978-0321841063.*

   WARNING: Be Sure to buy the Solar System edition of this book, or the complete edition that includes all chapters. You may notice some missing chapter numbers in the Solar System edition. This is normal, because it is just a part of a complete, more expensive, text. We do not cover chapters outside the Solar System edition in ASTR 207.

   TopHat Monocle: ASTR 207 will make use of the TopHat Monocle system under a campus site licence. This means that there will be no fee to students, but students are required to register at the TopHat Monocle website in order to obtain access to the course questions. **Instructions for use of TopHat Monocle will be given in class.**
   Students who do not have access to a cell phone or portable device for use of TopHat Monocle in class, can apply to the instructor to transfer the weight for in-class participation (3%) to the final exam. **This request must be received by the instructor by email stating your full name and student ID before the date of the first in-class test. You will receive a confirmation by email. Once granted, the weight transfer cannot be reversed.** It is not possible to transfer weight for the Challenge Questions, because these will be accessible outside class time through a regular desktop with access to the internet.

   Calculators: A desktop calculator is recommended for the in-class tests and the final exam. Calculators with advanced mathematical functions are not required, but they may be helpful to those who know how to use them. Use of calculator applications on mobile communication devices or other devices with data storage or access to the internet on the tests and the final exam is strictly prohibited. When in doubt, students should check with the instructor well before the first in-class test.

   Mastering Astronomy: Students who buy a new copy of the textbook through the Campus Bookstore may receive an enclosed access code to the MasteringAstronomy.com website. In ASTR 207 we will not use MasteringAstronomy

for assessment, but it remains available as a study aid for those who choose to use it. Purchase of access to MasteringAstronomy.com is not required for ASTR 207.

7. **Examination Policy**: Use of books is not allowed during in-class tests and during the final exam. Use of a pocket calculator during in-class tests and the final exam is recommended. Some may find the use of a ruler helpful in case a graph must be interpreted. Students should also read the Calendar, Section G, on Examinations.

8. **Approved Mandatory and Optional Course Supplemental Fees**: None. Please note that TopHat Monocle is used under a campus license. You should NOT purchase a subscription for TopHat Monocle.

9. **Writing across the curriculum statement:** In this course, the quality of writing is not evaluated.

10. **Human studies statement:** Not applicable. See also Section E.5 of the University Calendar.

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 Section K, Student Misconduct 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 on assembly points.

(c) **Academic Accommodation Policy:** Students with documentable disabilities are referred to the following links: Calendar entry on students with disabilities and Student Accessibility Services.

(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 is 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@ucagary.ca.
SU Faculty Rep. Phone: 220-3913 Email: sciencerep@su.ucalgary.ca
Student Ombudsman

(i) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. 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.

Grading scheme

Your Course Letter Grade for ASTR 207 will be based on the weighted average percentages of the various course components (Test 1, Test 2, in-class participation, homework challenge questions, 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 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 HIGHER THAN D+ 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.

In the Fall of 2013 we will spend some extra time on comets.