

Astronomy 1021 – Section 003
General Astronomy
Course Information: 2011-2012

*Note: This Course Information sheet is a living document that is sometimes updated with minor changes. Such updates will be announced in class, and the latest version will be posted on WebCT. The version number can be found at the bottom of each page. **It is your responsibility to ensure that you have the most recent version of this document.** The information on this handout is specific to this Section. All registered students are expected to have read this course information sheet carefully.*

1. Course Description

Course title: Astronomy 1021: General Astronomy

Description: A general survey of astronomy, including: the solar system and its constituents; stars, their basic properties and evolution; systems of stars including clusters, the milky way and other galaxies; the universe, its past, present and future structure; astronomical instruments; topics of current interest including pulsars, quasars, black holes.

Prerequisites: None

Antirequisites: None

3 lecture hours, 1.0 course

Lecture Times: Tuesday 7:00pm—10:00pm, NCB 101

2. Instructor & Contact Information

Instructors:

Prof. Jan Cami (Fall Term)

To be determined (Winter Term)

Physics & Astronomy Building

Room 237 B

Phone: (519) 661-2111 ext 80978

Course Coordinators: Prof. Jan Cami (fall), Prof. Pauline Barnby (winter)

Before contacting the instructors, make sure you have carefully read this document and the Frequently Asked Questions (FAQs) on WebCT. Questions that are addressed in this document or in the FAQs will not be answered over e-mail.

E-mail: WebCT has an e-mail feature that you should use to contact the instructors and/or TA's in this course. Please do not send them regular e-mail. Allow (and expect) 2-3 business days for a reply. Note that WebCT mail will not automatically be forwarded to your UWO mail account; therefore you should *check your WebCT/OWL mail status for replies.*

Office Hours: Wednesday 1:30pm-3:00pm (fall term, J. Cami); to be determined (winter term). If this time is not convenient, you can make an appointment for another day/time, or talk to the instructor after class. If you prefer an appointment with a TA, you can contact them through WebCT.

3. Required course materials

Textbook: **THE COSMIC PERSPECTIVE, 6th EDITION**, by Bennett, Donahue, Schneider, & Voit (Pearson-Addison Wesley). It is acceptable to use earlier editions as well, but it is your responsibility to be aware of the (sometimes significant) differences with the latest edition. All references to the textbook (e.g. page numbers, sections, ...) will refer to the 6th edition. If you prefer an electronic version of the book, access can be purchased through the publisher's website at www.mypearsonstore.ca.

Additional course materials (e.g. lecture notes, slides, movie clips, ...) will be made available on WebCT.

Note: at the bookstore, you may find that the textbook is packaged with an access code for Mastering Astronomy. Mastering Astronomy is a tremendous resource for students in this course, and therefore we encourage you to get an access code and use the platform as a learning tool. We will also offer tutorials, assignments and quizzes on Mastering Astronomy. Contrary to previous years though, work on Mastering Astronomy is optional, and no marks can be earned by using the site. Instructions on how to access our course on Mastering Astronomy will be posted on WebCT.

A Mastering Astronomy access code is thus not required course material.

4. Course website

All online instructional materials as well as grades for course components will be posted on the secure WebCT Owl site. For technical issues accessing this site in general or this course in particular, please check out the information at the ITS website: <http://www.uwo.ca/its/> and contact ITS services if problems persist.

The WebCT course website will be the only medium where additional course materials are distributed at the appropriate time; where announcements are made and projects are submitted; WebCT is furthermore the means to get access to your marks for various course components. Additionally, there is a course discussion forum, and a calendar containing all important dates for this course as well as links to useful resources.

You will need to successfully complete a short quiz on the material covered in this outline and accompanying documents before you can access the rest of the course material.

5. Course overview & objectives

Astronomy 1021 provides a general, non-mathematical introduction to Astronomy. A preliminary list of lecture topics can be found at the end of this document. Specific learning outcomes are listed in a separate document. At the end of this course, students should be able to:

- Know by name, define and characterize the main structural elements of the Universe at all scales
- Describe the origin and evolution of the Universe and objects within that Universe
- Have a good sense of relative sizes, distances and characteristic time scales of these objects

- Demonstrate a conceptual understanding of those physical processes that determine the appearance and evolution of astronomical objects and those that are relevant for interpreting astronomical observations.
- Explain the scientific method, and use examples from astronomy in their appropriate cultural context.
- Assess the uniqueness of Earth and life on Earth by comparison with other planets and properties of known planetary systems.

6. Course Components, Grades & Requirements

Your final grade in this course is obtained from marks for various course components (explained below) and calculated according to the following scheme:

Course Component	Weight
Tests & Exams	75%
Term Test I	20%
Term Test II	20%
Final Exam	35%
Projects (Cronyn & Other)	12%
Class Participation	12%
WebCT Course Outline Test	1%

The Department of Physics and Astronomy may, in rare cases, adjust the final course marks in order to conform to Departmental policy.

Requirements: To pass this course, you need to

1. obtain a final mark of at least 50% ***and***
2. obtain a passing mark on the exam component -- i.e. you need to score at least 37.5 out of 75 on the combined exams.

If you do not meet the second requirement, your final mark for this course will be arbitrarily lowered to a failing grade (e.g. 40% or the computed final mark, whichever is lower), irrespective of your score on other components.

Thus, a student who fails both Term Tests and the final exam automatically fails the course, even if the final mark (including other course components) is higher than 50%. Note though that failing a single exam or even two does not automatically mean a student fails the course. For instance, a student that obtains 40% on Term Test 1, 45% on Term Test 2 and 60% on the final exam has earned 38 of the 75 points represented by the tests and exams, and will thus pass the course despite failing two exams, provided that he or she obtains at least 12 out of the remaining 25 points from the other course components (and thus has a final mark of at least 50%).

Grades for various components will be posted on WebCT regularly; it is your responsibility to check these grades regularly. Any errors, or appeals to your scores, **must be reported to your instructor within two weeks** of their initial posting.

7. Tests & Exams

- There will be two one-hour long Term Tests during the year and one Final Exam. There is **no December exam** in this course.
- The dates for the Term Tests are given below. There will be no regular lecture on these dates:

	Date	Time	Location
Term Test I	Tue, Nov. 8, 2011	8:00pm—9:00pm	NCB 101
Term Test II	Tue, Feb. 7, 2012	8:00pm—9:00pm	NCB 101

- The final exam is to be scheduled by the Registrar's Office during the 2012 final examination period (April 14-30); exam times will be posted on the course website when available.
- Students needing to make travel arrangements are advised to book a travel date after the end of the examination period, and avoiding the term test dates. **No makeup exams will be given to accommodate travel!**
- Both Term Tests and the Final Exam will be **multiple-choice questions**. The *Scantron* forms used for these exams are computer-marked and cannot be processed when filled out in ink, therefore you should **bring a pencil to the tests and exams**, and **never** fill out any section of these forms in ink. Filling out any section in ink may result in a penalty.
- Computer-marked multiple-choice tests and exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.
- You should **bring your UWO student ID card** to all tests and exams. Failure to do so may result in a penalty.
- Only a pencil and your student ID are allowed on the tests and exams, i.e. no extra sheets and no electronic equipment (cell phones, calculators, ...) will be permitted.
- The tests and exams are meant to test your **knowledge and understanding** of the material covered in class, all of the class slides, the corresponding textbook sections and distributed course notes whenever appropriate. Material from the textbook that is not discussed or explicitly referred to in class or in the notes will not be tested on any exam.
- Term Test I covers all the course material up to the date of the test; Term Test II covers all material since Term Test I. The final exam is cumulative; roughly 30% of the questions will be in-depth questions on the material since Term Test II; the remaining 70% will be more general questions (use the learning outcomes as your guide) covering the entire course.

8. Projects

Throughout the year, you will be given the opportunity to complete a number of Astronomy Projects that are worth a total of 12% of your final mark. These projects typically require you to complete an activity (telescope observation, computer project, citizen science research), and submit a short quiz on WebCT. For full marks, you need to do the activity **and** answer the quiz questions correctly.

Starting on Tuesday, September 13th, 2011 and ending Thursday October 6th, 2011, you have the opportunity to carry out visual observations through the main telescope of the on-campus Cronyn Observatory under the guidance of a TA. These **Cronyn projects** are discussed in a separate document ("*Cronyn Observatory Telescope Projects*") that you should read as soon as possible. You should do at least 1 Cronyn project, but you may do up to 4.

Your best Cronyn project will be worth 3% of your final grade **without opportunity for make up**. The remaining 9% project marks can be obtained by mixing and matching the available projects. The table below summarizes these projects:

Project	Weight		Notes
Best Cronyn Project		3%	Sep 13—Oct 6 2011
Remaining Projects: Mix & Match		9%	
Other Cronyn Projects (3 possible)	Each 1%		Sep13 – Oct 6 2011
Horoscope Project	1%		Due Thu, Nov 3, 2011
Motions in the Sky	2%		Due Thu, Nov 3, 2011
Perimeter Institute Lecture	1%		Winter Term
Zooniverse (4 possible)	Each 1%		Winter Term

If you complete more projects than required, the projects with the lowest marks will be dropped from the calculation of your final mark. Late projects will not be accepted. Since there are more projects available than needed for full marks, no make-up opportunities will be given for project work either.

9. Class Participation

On average once per week, an in-class activity or quiz will be organized. Answer sheets will be provided, and should be returned to the instructor by the end of class. You will need to enter your UWO ID (not your student number) on the answer sheet to receive credit for the activity. Marks on these activities will be given for participation, completion and an honest effort rather than correctness. Full marks require participation in 75% of the activities. Thus, you can achieve a perfect participation grade even if you miss several lectures. Therefore, no make-up is offered for missing classes, including short absences due to illness.

10. Make-up policy

You should also be aware of the following Senate regulations:

- *If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to the Dean's office as soon as possible and contact your instructor immediately. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from the Dean's Office immediately.* For further information, please see http://www.uwo.ca/univsec/handbook/appeals/accommodation_medical.pdf.
- *A student requiring academic accommodation due to illness, should use the Student Medical Certificate when visiting an off-campus medical facility or request a Record's Release Form (located in the Dean's Office) for visits to Student Health Services.* The form can be found here: https://studentservices.uwo.ca/secure/medical_document.pdf.
- **Term Tests:** To be allowed to write a make-up test, you must provide the proper documentation to the Dean's Office of your Faculty supporting the reason for your absence at the scheduled test. The instructor may also require an explanation, and possibly additional documentation, for the time interval between the missed test and when the instructor was contacted about a make-up. Make-up tests can be of a different exam format than the regular tests.

- **Final Exam:** In accordance with Senate Policy, a Special Examination will be held within thirty days of the regular final examination for students who are unable to write the regular examination for medical or other documented reasons. Requests for such a Special Examination must be made to the Associate Dean, Faculty of Science.
Note that if you fail to write a scheduled Special Examination, permission to write another Special Examination will be granted only with the permission of the Dean in exceptional circumstances and with appropriate supporting documents. In such a case, the date of this Special Examination normally will be the scheduled date for the final exam the next time the course is offered.
- **Astronomy Projects (including Cronyn projects).** No make-up opportunity will be offered (Section 8).
- **Participation Grade.** No make-up opportunity will be offered (Section 9).

11. Cheating (Scholastic Offenses)

Scholastic Offenses are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offense, at the following web site:

http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_undergrad.pdf

It is a scholastic offense to cheat on a test or exam, to plagiarize a course project, to modify marked material to falsely justify additional credit. Cheating also includes having available any other electronic devices than a watch during a test or exam. Committing a scholastic offense is attended by academic penalty, which may include expulsion from the program. Computer-marked multiple-choice tests and exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating. If you are caught cheating, there will be no second warning. Any student caught engaging in this behavior will (1) receive a mark of zero on the course component in question; (2) receive a mark of zero for their class participation mark, and (3) may be subject to a further, and often quite severe, penalty.

12. Classroom Conduct

The lectures in this course are intended to provide students with an opportunity to learn, and we expect you to respect the rights of your classmates to benefit from the lectures by limiting your conversations to those essential to the class. Please arrive on time, switch off your cell phones and do not leave during the lectures. Laptops will only be allowed when used for the purpose of taking notes, and not for any other application. Disruptive behavior in class or on WebCT will not be tolerated. Students who persist in loud, rude or otherwise disruptive or inappropriate behavior will be asked to leave and may see their participation grade being reduced.

13. Accessibility

Please contact the course instructor if you require material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

14. Accommodation for Religious Holidays

Please see the link below for the University's policy on for accommodation due to religious holidays.
http://www.uwo.ca/univsec/handbook/appeals/accommodation_religious.pdf

15. Complaints and Suggestions

If you have a concern about something, please let us know. We rely on your feedback. Please contact initially the person most concerned – this will usually be your instructor. If that is not satisfactory, or if there is something more general bothering you, talk it over with the Physics & Astronomy Department Chair or the Associate Chair of Undergraduate Studies (for contact information see <http://www.physics.uwo.ca>).

16. Your Grade

You earn your grade for completing course requirements, and for having gained a good knowledge and understanding of the course material. To maximize this grade, you should:

- 1) read the lecture notes and/or assigned textbook reading before each class;
- 2) attend class regularly, and participate!
- 3) review past lectures regularly;
- 4) do all of the course projects and assignments on time;
- 5) answer all of the summary questions on Mastering Astronomy and in your textbook;
- 6) seek regular help for material that you do not understand.

On average, this should take up about 6—9 hours per week. Check the Frequently Asked Questions (FAQs) on the course website and follow discussions on the forum. In addition, it pays off to learn how to best approach writing multiple choice exams. Helpful tips are provided on the website of the Student Development Centre <http://www.sdc.uwo.ca/learning/index.html?mcwrit>.

If you find that you are falling behind or are having difficulties with the course material, please contact your instructor or a TA immediately. A lot can be done in November, much less can be done in March.

17.Lecture Topics – Course Content (2011-2012)

Below is a provisional list of lecture topics and course content; actual lectures might differ.

Dates	Topic	Reading	Notes
Sep 13	<i>Introduction to Astronomy 1021</i> T1: Scale of the Universe	1.1, 1.2, 1.3	First Class, ADT pre-test Sep 14: Start Cronyn projects
Sep 20	T2: The Night Sky	2.1, 2.2	
Sep 27	The Night Sky	2.3, 2.4	
Oct 4	T3: The Nature of Science	3.4, 3.5	Oct. 8: Cronyn Projects End
Oct 11	T4: Motion, Energy & Gravity	Chapter 4	
Oct 18	Motion, Energy & Gravity (cont'd) T5: Light & Matter	Chapter 4 Chapter 5	
Oct 25	Light & Matter T6: Telescopes & Instruments	Chapter 5 Chapter 6	
Nov 1	Telescopes & Instruments T7: The Solar System: Big Picture & formation	Chapter 6 7.1, 7.2, Chapter 8	Nov 3: Horoscope project due Nov 3: Motions in the sky due
Nov 8	Term Test I (20%) – No Lecture		T1—T6 covered
Nov 15	T8: The Terrestrial Planets	9.1, 9.2; 10.1, 10.2, 10.4-6	
Nov 22	T9: The Jovian Planets	Chapter 11	
Nov 29	T10: Small Bodies	Chapter 12	Nov. 30: Drop Date
Dec 6	T11: Extrasolar Planets	Chapter 13	
	Break: No December Exam		
Jan 10	T12: The Sun	14.2,14.3	
Jan 17	T13: Stars: basic properties	Chapter 15	
Jan 24	T14: Star Formation	Chapter 16	
Jan 31	T15: Star lives	Chapter 17	
Feb 7	Term Test II (20%) – No Lecture		T7--T14 covered
Feb 14	T16: Stellar Remnants	Chapter 18	
Feb 21	<i>Reading week (no lectures)</i>		
Feb 28	T17: The Milky Way	Chapter 19	
Mar 6	T18: Galaxies and their evolution	20.1, 20.2, 21.1, 21.2	
Mar 13	T19: Expanding Universe & Big Bang	20.3, 23.4	
Mar 20	T20: Dark Matter & Dark Energy	Chapter 22	
Mar 27	T21: The Early Universe	Chapter 23	
Apr 3	T22: (Your) life in the universe	Chapter 24	
Apr 10	Review & Astronomy Diagnostic Test		Apr 11: remaining projects due.
Apr.??	Final Exam (35%)		cumulative