



The University of Southern Queensland

## Course specification

The current and official versions of the course specifications are available on the web at  
<<http://www.usq.edu.au/coursespecification/current>>.  
Please consult the web for updates that may occur during the year.

### Description: Astronomy 1

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
PHY	1101	86719	1, 2009	EXT	1.00	Toowoomba

<b>Academic group:</b>	FOSCI
<b>Academic org:</b>	FOS002
<b>Student contribution band:</b>	6
<b>ASCED code:</b>	010303

### STAFFING

Examiner: Brad Carter  
Moderator: Joachim Ribbe

### RATIONALE

This astronomy course is on planetary science, the study of planetary systems. Planetary science is a subject that helps us better understand the Earth, and teaches us how the Earth has formed and evolved, why it is the way it is today, and how our planet will continue to change. Planetary science enables Earth to be placed within the broader context of planets and planetary systems, and helps us appreciate the profound connections between astronomy and life on Earth. This course is especially relevant to physics students wishing to learn astronomy, to climatology students interested in Earth's ancient origins, and to education students planning to teach astronomy or earth science. Nevertheless, the course is open to all, and offers an accessible introduction to how science explains our place in the universe. Students in this course also can make use of Mt Kent Observatory to learn practical skills in observational astronomy and better appreciate the scientific method. The course complements PHY1107 Astronomy 2, an introductory course about the Sun, stars and galaxies.

### SYNOPSIS

This astronomy course forms an introduction to planetary science, the study of planetary systems. Astronomy is presented as a way to understand our origins and place in the universe. Some of the scientific and technological tools used in astronomy are then discussed, as a prelude to a review of our knowledge of the planets orbiting our Sun, and extrasolar planets orbiting other stars. Earth is recognised as a small terrestrial world among the many planets orbiting our star and others, and the history of our planetary system is traced from a cloud of gas and dust through to the diversity of large and small worlds we observe today. The course includes discussion of the geology and atmospheres of the terrestrial planets, jovian planet systems, and the interplanetary bodies of our solar system. Extrasolar planet studies are presented as an emerging research field transforming planetary science. Mt Kent Observatory is also made available to students enrolled in this course, to provide an opportunity for learning technical skills in observational astronomy. This course complements PHY1107 Astronomy 2, an introduction to the Sun, the stars and galaxies.

## OBJECTIVES

On completion of this course students will be able to:

1. comprehend how the sky is affected by motions of solar system bodies (CMA1, Exam);
2. describe the historical basis of our scientific understanding of the solar system (CMA1, Exam);
3. describe some of the technology underpinning observational astronomy (CMA1, Exam);
4. explain the diversity of worlds in our solar system (CMA1, Exam);
5. summarise how our solar system formed (CMA1, Exam);
6. compare the geological properties of the solar system's terrestrial planets (CMA2, Exam);
7. compare the atmospheres of the solar system's terrestrial planets (CMA2, Exam);
8. compare the solar system's jovian planet systems (CMA2, Exam);
9. compare the solar system's comets and asteroids (CMA2, Exam);
10. examine the growing impact of extrasolar planet studies on planetary science (CMA2, Exam);
11. plan an astronomical observation (Assignment).

## TOPICS

	Description	Weighting (%)
1.	The Sky	10.00
2.	The Science of Astronomy	10.00
3.	Astronomical Observatories	10.00
4.	The Solar System	10.00
5.	Formation of the Solar System	10.00
6.	Geology of the Terrestrial Planets	10.00
7.	Atmospheres of the Terrestrial Planets	10.00
8.	The Jovian Planet Systems	10.00
9.	Interplanetary Bodies	10.00
10.	Extrasolar Planets	10.00

## TEXT and MATERIALS required to be PURCHASED or ACCESSED

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at <http://bookshop.usq.edu.au> click 'Semester', then enter your 'Course Code' (no spaces).

Bennett, J, Donahue, M, Schneider, N & Voit, M 2008, *The Cosmic Perspective*, 5th edn, Pearson Educ/ Addison Wesley-Benjamin Cummings, USA.

(with Mastering Astronomy and Skygazer Planetarium Software <http://www.aw-bc.com>  
<http://www.MasteringAstronomy.com> This book is the set text for both PHY1101 Astronomy 1 and PHY1107 Astronomy 2.)

## REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

Freedman, RA & Kaufmann WJ 2005, *Universe*, 7th edn, WH Freeman & Co, New York.  
(<http://bcs.whfreeman.com/universe7e/>)

Seeds, MA 2006, *Horizons*, 9th edn, Thomson Brooks/Cole, USA.  
([www.brookscole.com/astronomy](http://www.brookscole.com/astronomy))

## STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Assignments	24.00
Computer Managed Assessment	24.00
Examinations	2.00
Field Trips or Excursions	4.00
Private Study	72.00
Workshops	48.00

## ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
CMA 1	10.00	10.00	03 Apr 2009
ASSIGNMENT	20.00	20.00	01 May 2009
CMA 2	10.00	10.00	05 Jun 2009
2 HR RESTRICTED EXAM	60.00	60.00	END S1 (see note 1)

### NOTES

1. Examination dates will be available during the Semester.

## IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:  
There are no attendance requirements for this course. However, it is the students' responsibility to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.
- 2 Requirements for students to complete each assessment item satisfactorily:  
To satisfactorily complete an assessment item a student must achieve at least 50% of the marks or a grade of at least C. Students do not have to satisfactorily complete each assessment item to be awarded a passing grade in this course. Refer to Statement 4 below for the requirements to receive a passing grade in this course.

- 3 Penalties for late submission of required work:  
If students submit assignments after the due date without (prior) approval of the examiner then a penalty of 5% of the total marks gained by the student for the assignment may apply for each working day late up to ten working days at which time a mark of zero may be recorded.. No assignments will be accepted after model answers have been posted.
- 4 Requirements for student to be awarded a passing grade in the course:  
To be assured of receiving a passing grade a student must achieve at least 50% of the total weighted marks available for the course.
- 5 Method used to combine assessment results to attain final grade:  
The final grades for students will be assigned on the basis of the aggregate of the weighted marks obtained for each of the summative assessment items in the course.
- 6 Examination information:  
Candidates are allowed access only to specific materials during a Restricted Examination. The only materials that candidates may use in the restricted examination for this course are: writing materials (non-electronic and free from material which could give the student an unfair advantage in the examination); calculators which cannot hold textual information (students must indicate on their examination paper the make and model of any calculator(s) they use during the examination). Students whose first language is not English, may, take an appropriate unmarked non-electronic translation dictionary (but not technical dictionary) into the examination. Dictionaries with any handwritten notes will not be permitted. Translation dictionaries will be subject to perusal and may be removed from the candidate's possession until appropriate disciplinary action is completed if found to contain material that could give the candidate an unfair advantage.
- 7 Examination period when Deferred/Supplementary examinations will be held:  
Any Deferred or Supplementary examinations for this course will be held during the next examination.
- 8 University Regulations:  
Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene University Regulations. These regulations can be found at the URL <http://www.usq.edu.au/corporateservices/calendar/part5.htm> or in the current USQ Handbook.

## **ASSESSMENT NOTES**

- 9 The due date for an assignment is the date by which a student must despatch the assignment to the USQ. The onus is on the student to provide proof of the despatch date, if requested by the Examiner.
- 10 In accordance with University Policy, the Examiner may grant an extension of the due date of an assignment in extenuating circumstances.
- 11 The Faculty will NOT accept submission of assignments by facsimile.
- 12 Students who do not have regular access to postal services or who are otherwise disadvantaged by these regulations may be given special consideration. They should contact the examiner of the course to negotiate such special arrangements.
- 13 In the event that a due date for an assignment falls on a local public holiday in their area, such as a Show holiday, the due date for the assignment will be the next day. Students are to note on the assignment cover the date of the public holiday for the Examiner's convenience.

- 14 Students who, for medical, family/personal, or employment-related reasons, are unable to complete an assignment or to sit for an examination at the scheduled time may apply to defer an assessment in a course. Such a request must be accompanied by appropriate supporting documentation. One of the following temporary grades may be awarded IDS (Incomplete - Deferred Examination); IDM (Incomplete Deferred Make-up); IDB (Incomplete - Both Deferred Examination and Deferred Make-up).Deferred Examination; IDM (Incomplete Deferred Make-up); IDB (Incomplete - Both Deferred Examination and Deferred Make-up).
- 15 Students may be required to provide a copy of assignments submitted for assessment purposes. Such copies should be dispatched to the USQ within 24 hours of receipt of a request to do so.

### **OTHER REQUIREMENTS**

- 1 Students will require access to e-mail and internet access to USQConnect for this course.
-