



The University of Southern Queensland

Course Specification

Description: Astronomy

Subject	Cat-Nbr	Class	Term	Mode	Units	Campus
PHY	1101	14404	2, 2002	EXT	1.00	TWMBBA

Academic Group:	FOSCI
Academic Org:	FOS002
HECS Band:	2
ASCED Code:	010303

STAFFING

Examiner: Brad Carter

Moderator: Alfio Parisi

RATIONALE

The course introduces students to a number of topics in astronomy. The Sun and planets, stars, galaxies and other celestial objects are described in a mostly qualitative manner, and the science of astronomy is used to illustrate some fundamental physical concepts. Students will be encouraged to discuss astronomical subjects of interest, and will be taught some of the practical aspects of observing the sky.

SYNOPSIS

The course begins with a basic introduction to observational astronomy. The programme material then reviews astronomy's historical origins, and the telescopes and techniques used in this branch of science. The births, lives and deaths of stars are covered, including a discussion of black holes. Our Milky Way galaxy is reviewed, and followed by a survey of the different types of galaxies beyond our own. The formation of the universe in the Big Bang is studied, as well as the overall structure and possible fate of the universe. The solar system is discussed in detail, including a study of planet Earth. The programme concludes with an investigation into the chances of extraterrestrial life and intelligence. Topics covered: Observing the sky; The history of astronomy; Astronomical techniques and telescopes; The Sun; The lives of the stars; The Milky Way and other galaxies; Cosmology and the Big Bang; The solar system; The search for extraterrestrial life.

OBJECTIVES

On successful completion of this course students will be able to:

- show an understanding of the operation of telescopes and aspects of observational techniques as a means of exploration of the universe;
- describe current theories concerning the origin and nature of the solar system;

- explain phenomena of astronomical origin such as lunar phases, eclipses, the visibility of planets and the brightness of stars;
- demonstrate a knowledge of current theories on the origin of stars, galaxies and the universe itself, and the chemical elements;
- display an appreciation of the dimension and structure of the known Universe and discuss aspects of space travel and extra terrestrial intelligence;
- discuss current concerns regarding global atmospheric disturbances as a result of cosmic events, as related to their effects on climate, the biosphere and the survival of life on this planet.

TOPICS

Description	Weighting (%)
1. The Sky	20.00
2. The Stars	20.00
3. The Universe of Galaxies	20.00
4. The Solar System and Life	20.00
5. Astronomy Essay	20.00

TEXT and MATERIALS required to be PURCHASED or ACCESSED:

Books can be ordered by fax or telephone. For costs and further details use the 'Book Search' facility at <http://bookshop.usq.edu.au> by entering the author or title of the text.

Lattanzio, Stephen, P., Levine, Joel, M. & Lee, Valerie Lynch 2000, *Telecourse Student Guide for Universe: The Infinite Frontier*, 3rd edition, Brooks/Cole (A Division of Thomson Learning), Pacific Grove, California.

(STUDY MATERIAL)

Seeds, Michael, A 2001, *Horizons: Exploring the Universe*, 7th edition, Brooks/Cole (A Division of Thomson Learning), Pacific Grove, California.

(Note: The above two items are bundled together for sale by the USQ Bookshop. A second (extra costs) option is a bundle including the above plus an NTSC format videotape of four 28min. episodes of the Universe astronomy video series. Please contact the USQ Bookshop for details on price and availability of the two bundle options. It should be noted that the complete Universe series is housed at the USQ Toowoomba campus library. Contact the library for its availability. the Universe videos are not needed for students in the USQ astronomy course.)

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.

Ellyard, David & Tirion, Will 2001, *The Southern Sky Guide*, Cambridge University Press, New York.

Malin, David 1993, *A View of the Universe*, Cambridge University Press, New York.

Morrison, O., Wolff, S., and Fraknoi, A 1995, *Abell's Exploration of the Universe*, 7th edition, Saunders College Publishing, Philadelphia.

Norton, Arthur P 1989, *'Norton's 2000.0' Star atlas*, Longman Scientific & Technical, Harlow.

(Available through Sky Publishing, P.O. Box 9111, Belmont, MA 02178, USA)

Sky & Space magazine, 80 Ebley Street, Bondi Junction, NSW 2022 'Sky & Space (Periodical)' (Available: Available from Newsagents) .

Sky Publishing, Belmont, MA, USA 'Sky and Telescope (Periodical)' (Available: <http://www.skypub.com>) .

STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Assessment	40
Examinations	2
Private Study	128

ASSESSMENT DETAILS

Description	Marks Out of	Wtg(%)	Required	Due Date
CMA 1	30.00	10.00	Y	02 Sep 2002
ASTRONOMY ESSAY	20.00	20.00	Y	11 Oct 2002
CMA 2	30.00	10.00	Y	28 Oct 2002
2 HR RESTRICTED EXAM	60.00	60.00	Y	END S2 (see note 4)

NOTES:

4. Examination dates will be available during the Semester. Please refer to the examination timetable when published.

OTHER REQUIREMENTS

- 1 Attendance Requirements It is the students' responsibility to participate actively in all classes scheduled for them, and 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 to Complete Satisfactorily Each Assessment Item To complete satisfactorily each of the assignments students must obtain at least half of the marks available for each assignment. To ensure that students can satisfy the objectives of the practical component of the course, they must attend at least 80% of the practical classes, including submission of the assessment items and obtain at least half of the marks available for each item submitted. To complete satisfactorily the

examination in the course, students must obtain at least half of the marks available for each examination.

- 3 Minimum Requirements to Pass the Course To be assured of a pass in the course, students must: obtain an overall mark of at least 50%; obtain at least 50% of the marks available in the examination(s); obtain an overall mark of at least 50% in the other assessments
 - 4 Grading Final grades for students will be determined by the addition of the marks obtained in each assessment item, weighted as in the Assessment Details.
 - 5 Supplementary and Deferred Examinations Students who obtain an overall passing mark, but who do not perform satisfactorily in an examination, may, at the discretion of the examiner, be granted a supplementary examination. Students will be granted a deferred examination only if they perform satisfactorily in all other assessment items. Any supplementary or deferred examinations for this course will be held in semester 1 exam period of the following academic year.
 - 6 Assignments The due date for assessments is the date by which a student must despatch it to the USQ. The onus is on the student to provide proof of the despatch date, if requested by the Examiner. Students must retain a copy of any assignments submitted. This must be produced within 48 hours if required by the Examiner. In accordance with the University's Policy on Assignments (Regulation 5.6.1), the Examiner of a course may grant an extension of the due date of an assignment in extenuating circumstances. This policy may be found in the USQ Handbook, the Distance Education Student Guide and the Faculty of Sciences' Orientation Handbook for new on-campus students. All students are advised to study and follow the guidelines associated with this policy. An assignment submitted after the due date without an extension approved by the Examiner, will attract a penalty of up to 20 percent of the assigned mark for each day (or part thereof) that the assignment is late.
 - 7 Examinations Candidates should be aware that the University has policies and regulations (Regulation 5.6.2.2) about the use of unfair means and electronic devices in an examination and they should refer to them to determine whether or not actions they intend to take are acceptable to the University. Restricted Examination: Candidates will be allowed access only to specific materials in a restricted examination. The only materials that candidates may use in the restricted examination for this course are: (a) writing materials (non-electronic and free from materials which could give the student an unfair advantage in the examination); (b) 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). With the approval of the Examiner, candidates may take an appropriate non-electronic translation dictionary into the examination. This 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. A list of the materials candidates may access in the restricted examination will be on the frontispiece of the examination paper.
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