



The University of Southern Queensland

## Course specification

| <b>Description: Research Practice and Ethics</b> |         |       |         |      |       |           |
|--|---------|-------|---------|------|-------|-----------|
| Subject  | Cat-nbr | Class | Term    | Mode | Units | Campus    |
| SCI  | 4405    | 45392 | 2, 2005 | ONC  | 1.00  | Toowoomba |

|                                   |        |
|-----------------------------------|--------|
| <b>Academic group:</b>            | FOSCI  |
| <b>Academic org:</b>              | FOS002 |
| <b>Student contribution band:</b> | 2      |
| <b>ASCED code:</b>                | 019999 |

### STAFFING

Examiner: Mark Sutherland

Moderator: Alfio Parisi

### RATIONALE

In the contemporary world, science and technology are increasingly seen as fundamental for human progress and survival. As the power of technology has increased, ethical considerations in the practice of science have become a critical component in the interaction between science and society. Additionally, the limited ability of society to support scientific research has led to ever increasing competition for these resources and emphasised the need for skills in both scientific communication and information technology. This course is designed to allow students to appreciate the role of philosophy and ethics in the practice of science and to be aware of, and develop, a range of communication skills required to successfully pursue a career in scientific research.

### SYNOPSIS

This course is designed to allow students to appreciate the role of communication skills required in the successful pursuit of a career in scientific research and to appreciate the role of philosophy in science. The modular structure of the course is designed to allow the student to develop skills in particular aspects of scientific communication. Topics include: Computer based information retrieval, experimental design and analysis, verbal and written scientific communication skills (debates, seminars, posters and papers) and, the interaction between science and society with an emphasis on the philosophy of science.

### OBJECTIVES

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

1. demonstrate skills in verbal presentation of scientific data;
2. demonstrate skills in the written presentation of scientific data;
3. demonstrate skills in the preparation and presentation of research grant applications;
4. use computerised data base searching facilities;
5. demonstrate an understanding of the varieties of scientific method and their historical evolution.

## TOPICS

| Description   | Weighting (%) |
|---|---------------|
| 1. The course will consist of up to nine modules of which three will be assessed. Modules to be undertaken, from the following list, will be designated by the course examiner at the commencement of the semester. Each module will normally consist of two 2 hour sessions led by a module coordinator. 1. Database searching and referencing | 5.00          |
| 2. Scientific Writing   | 15.00         |
| 3. Criticism in Science/Peer Review Exercises   | 15.00         |
| 4. Ethical Issues in Science I  | 10.00         |
| 5. Ethical Issues in Science II   | 10.00         |
| 6. Funding for Research   | 10.00         |
| 7. Experimental Design and analysis   | 10.00         |
| 8. Conference Presentation  | 15.00         |
| 9. Philosophy of Science  | 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).

## 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.

Booth, V 1995, *Communicating in Science, Writing a Scientific Paper and Speaking at Scientific Meetings*, 2nd edn, Cambridge University Press, New York.

(ISBN 0 521 42915 3)

Briscoe, M H 1996, *Preparing Scientific Illustrations - A Guide to Better Posters*, 2nd edn, Springer-Verlag, New York.

(ISBN 0-387-94581-4)

Daly, J 1996, *Ethical Intersections, Health Research Methods and Researcher Responsibility*, Allen & Unwin Publishes, Sydney.

Day, R A 1998, *How to Write and Publish a Scientific Paper*, 5th edn, Oryx Press, Pheonix Ariz.

(ISBN 0 521 36760 3)

Englehardt, HT 1996, *The Foundations of Bioethics*, Oxford University Press, New York.

- Eunson, B 1995, *Writing Technical Documents*, John Wiley and Sons, Milton, Qld.  
(ISBN 0 471 33566 5)
- Kimmel, AJ 1996, *Ethical Issues in Behavioural Research*, Blackwell, Cambridge.
- Lobban, C S and Schefter, M 1992, *Successful Lab Reports*, Cambridge University Press, New York.  
(ISBN 0 521 40741 9)
- Oldroyd, D 1986, *The Arch of Knowledge*, University of NSW Press, Kensington.
- Oldroyd, D 1982, *Science and Ethics*, University of NSW Press, Kensington.
- Riggs, P J 1992, *Whys and Ways of Science: Introducing Philosophical and Sociological Theories of Science*, Melbourne University Press, Carlton.  
(ISBN 0 522 84471 5)
- Sides, C H 1999, *How to Write and Present Technical Information*, 3rd edn, Cambridge University Press, Oakleigh, Vic.  
(ISBN 0 521 43861 6)

## STUDENT WORKLOAD REQUIREMENTS

| ACTIVITY      | HOURS  |
|---------------|--------|
| Private Study | 140.00 |
| Tutorials     | 20.00  |

## ASSESSMENT DETAILS

| Description          | Marks out of | Wtg(%) | Due date                    |
|----------------------|--------------|--------|-----------------------------|
| MODULE 2: ASSIGNMENT | 1.00         | 33.00  | 19 Jul 2005<br>(see note 1) |
| MODULE 3: ASSIGNMENT | 1.00         | 33.00  | 19 Jul 2005                 |
| MODULE 8: SEMINAR    | 1.00         | 34.00  | 19 Jul 2005                 |

### NOTES

- Further details about the due dates and assessments for Modules 2,3 and 8 will be provided by the Examiner.

## IMPORTANT ASSESSMENT INFORMATION

- Attendance requirements:  
It is the students' responsibility to attend and participate appropriately in all activities (such as lectures, tutorials, laboratories and practical work) 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.
- Requirements for students to complete each assessment item satisfactorily:  
To complete each of the assessment items satisfactorily, students must obtain the one mark available for that assessment item.
- Penalties for late submission of required work:

If students submit assignments after the due date without prior approval they can expect to be given a Fail grade for the course.

- 4 Requirements for student to be awarded a passing grade in the course:  
To be assured of a passing grade, students must attend all modules and complete all summative assessment items satisfactorily.
- 5 Method used to combine assessment results to attain final grade:  
All students who satisfy the requirements of the course will be given a grade of P. Other students will be given either a Fail grade or an incomplete grade.
- 6 Examination information:  
There is no examination in this course.
- 7 Examination period when Deferred/Supplementary examinations will be held:  
There will be no Deferred or Supplementary examinations in this course.
- 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.