The University of Southern Queensland

# Course Specification

| Description: Research Practice and Ethics A | | | | | | |
|---|---|---|---|---|---|---|
| Subject | Cat-Nbr | Class | Term | Mode | Units | Campus |
| SCI | 4405 | 20356 | 1, 2003 | ONC | 1.00 | TWMBA |

**Academic Group:** FOSCI
**Academic Org:** FOS002
**HECS Band:** 2
**ASCED Code:** 019999

## STAFFING

Examiner: Michael Kotiw
Moderator: Grant Daggard

## 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:

- demonstrate skills in verbal presentation of scientific data;
- demonstrate skills in the written presentation of scientific data;
- demonstrate skills in the preparation and presentation of research grant applications;

- use computerised data base searching facilities;
- demonstrate an understanding of the varieties of scientific method and their historical evolution.

## TOPICS

| Description | Weighting (%) |
|---|---|
| 1. Database searching and referencing | 2.00 |
| 2. Powerpoint presentations | 2.00 |
| 3. Experimental Design and Analysis | 24.00 |
| 4. Scientific Writing | 24.00 |
| 5. Conference Presentation | 24.00 |
| 6. Philosophy of Science | 24.00 |

## 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 edition, Cambridge University Press, New York, ISBN 0 521 42915 3.

Briscoe, M.H. 1996, *Preparing Scientific Illustrations - A Guide to Better Posters*, 2nd edition, Springer-Verlag, New York, ISBN 0-387-94581-4.

Daly, J. 1996, *Ethical Intersections, Health Research methods and Researcher Responsibility*, Allen & Unwin Publishers, Sydney, ISBN: 1 86448 050 5.

Day, R.A. 1995, *How to Write and Publish a Scientific Paper*, 4th edition, Cambridge University Press, Cambridge, ISBN 0 521 36760 3.

Englehardt, H.T. 1996, *The Foundations of Bioethics*, 2nd edition, Oxford University Press, New York, ISBN 0 195 05736 8.

Eunson, B. 1995, *Writing Technical Documents*, John Wiley and Sons, Milton, Qld., ISBN 0 471 33566 5.

Kimmel, A.J. 1996, *Ethical Issues in Behavioral Research*, Blackwell Publishers, Cambridge, Mass., ISBN 1 55786 395 4.

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 edition, Cambridge University Press, Oakleigh, Vic., ISBN 0 521 43861 6.

Snow, C.P. 1964, *The Two Cultures; and A Second Look: an expanded version of 'The two cultures and the scientific revolution'*, Cambridge University Press, Cambridge.

## STUDENT WORKLOAD REQUIREMENTS

| ACTIVITY | HOURS |
|---|---|
| Private Study | 140 |
| Tutorial | 20 |

## ASSESSMENT DETAILS

| Description | Marks Out of | Wtg(%) | Required | Due Date |
|---|---|---|---|---|
| MODULE 1: POWERPOINT INTRO | 2.00 | 2.00 | Y | 04 Mar 2003 (see note ) |
| MODULE 2: LIBRARY ORIENTATION | 2.00 | 2.00 | Y | 04 Mar 2003 |
| MODULE 3: DATA ANALYSIS/EXP | 24.00 | 24.00 | Y | 04 Mar 2003 |
| MODULE 4: SCIENTIFIC WRITING | 24.00 | 24.00 | Y | 04 Mar 2003 |
| MODULE 5: CONFERENCE PRESENTAT | 24.00 | 24.00 | Y | 04 Mar 2003 |
| MODULE 6: PHILOSOPHY OF SCIENC | 24.00 | 24.00 | Y | 04 Mar 2003 |

**NOTES:**

. Further details about the due dates for Modules 1-6 will be provided by the Examiner.

## IMPORTANT ASSESSMENT INFORMATION

1 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.

2 Requirements for students to complete each assessment item satisfactorily:
To complete each of the assessment items satisfactorily, students must obtain at least 50% of the marks available for each assessment item.

3 Penalties for late submission of required work:

If students submit assignments after the due date without prior approval then a penalty of 5% of the total marks available for the assignment will apply for each working day late.

4 Requirements for student to be awarded a passing grade in the course:
To be assured of a passing grade, students must demonstrate, via the summative assessment items, that they have achieved the required minimum standards in relation to the objectives of the course by satisfactorily completing all summative assessment items.

5 Method used to combine assessment results to attain final grade:
The final grades for students will be assigned on the basis of the weighted aggregate of the marks obtained for each of the summative assessment items in the course.

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/SECARIAT/calendar/Part5/ or in the printed version of the current USQ Handbook.