



The University of Southern Queensland

Course specification

Description: Ecology						
Subject	Cat-nbr	Class	Term	Mode	Units	Campus
BIO	2208	40928	1, 2005	ONC	1.00	Toowoomba

Academic group:	FOSCI
Academic org:	FOS002
Student contribution band:	2
ASCED code:	010905

STAFFING

Examiner: Andrew Le Brocque

Moderator: Martine Maron

REQUISITES

Pre-requisite: BIO2103 and STA2300

RATIONALE

Knowledge of ecological systems and processes and their contribution to our understanding of the effects of human activities on biodiversity and the environment has become essential for graduates in all disciplines. This course aims to provide a basic understanding of the fundamentals of ecological theory and practise, and is of particular relevance to students wishing to pursue careers in biology, environmental science, environmental education and engineering. For ecology and conservation students, this course will provide the foundation for more advanced ecology courses in their programme.

SYNOPSIS

This course provides knowledge on the principles and applied aspects of sampling organisms from a variety of natural systems, the fundamental ecology of populations, communities and ecosystems, and the analysis and interpretation of ecological patterns. Practicals work in the course will investigate sampling strategies and methods for a wide variety of organisms, population life history and dynamics of species, and community structure and composition in disturbed and natural habitats. Practical work may include compulsory extended field studies.

OBJECTIVES

On completion of this course students will be able to:

1. demonstrate a basic understanding of the ecology of populations communities; and ecosystems;
2. demonstrate an understanding of major Australian ecosystems;
3. demonstrate competence in practical ecology in a variety of field situations and in the laboratory;

4. demonstrate an understanding of the basic concepts of sampling organisms;
5. demonstrate a basic understanding of, and competence in, methods used to analyse ecological data.

TOPICS

	Description	Weighting (%)
1.	The Nature of Ecology : levels of ecological organisation; concepts & limitations; organism & environment.	8.00
2.	Quantitative Ecology: experiments & analysis of ecological data, sampling theory, estimating abundance and biomass; sampling mobile organisms.	24.00
3.	Populations: dispersion, density, dispersal, genetic variation, age structure and demography, growth and survivorship, life history strategies, development, reproduction, intraspecific competition, regulation Vs environmental control, metapopulations, viability and extinction.	20.00
4.	Species Interactions: Inter-specific competition, mutualism, commensalism, amansalism, herbivory and predation	8.00
5.	Communities: community concept; community structure and roles of organisms; ecological richness and diversity; ecological niche.	24.00
6.	Succession and Disturbance: community development, primary vs secondary succession, models of succession, disturbance and fire.	8.00
7.	Biodiversity and Conservation: biological diversity, extinction, conservation biology.	8.00

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).

Krebs, CJ 2001, *Ecology: the experimental analysis of distribution and abundance*, Addison-Wesley, San Francisco.

Le Brocque, A & Maron, M 2005, *BIO2208 - Ecology Practical Notes and Supplementary Materials*, University of Southern Queensland, Toowoomba.

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.

Attiwill, P & Wilson B 2003, *Ecology: An Australian Perspective*, th edn, Oxford University Press, South Melbourne.

Dytham, C 1999, *Choosing and Using Statistics: A Biologists Guide*, Blackwell Science, Oxford.

Ebert, TA 1998, *Plant and Animal Populations*, Academic Press, San Diego.

Fowler, J, Cohen, L & Jarvis, P 1998, *Practical Statistics for Field Biology*, 2nd edn, Wiley, Chichester.

Krebs, CJ 1999, *Ecological Methodology*, 1st edn, Benjamin/Cummings, Menlo Park.

Mackenzie, A, Ball, AS & Virdee, SR 1998, *Instant Notes in Ecology*, Bios Scientific Publishers, Oxford.

STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Examinations	3.00
Field Trips or Excursions	16.00
Lectures	26.00
Private Study	72.00
Report Writing	35.00
Tutorials	14.00

ASSESSMENT DETAILS

Description	Marks out of	Wtg(%)	Due date
REPORT 1	15.00	15.00	12 Apr 2005
REPORT 2	25.00	25.00	16 May 2005
3 HR CLOSED EXAMINATION	60.00	60.00	END S1 (see note 1)

NOTES

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

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. To maximize their chances of satisfying the objectives

of the practical component of the course, students should attend and actively participate in the laboratory sessions in the course.

- 2 Requirements for students to complete each assessment item satisfactorily:
To complete each of the assignments satisfactorily, students must obtain at least 50% of the marks available for each assignment. To complete the practical component satisfactorily, students must submit all of the nominated practical reports and obtain at least 50% of the marks available for each report submitted.
- 3 Penalties for late submission of required work:
If students submit assignments after the due date without prior approval then a penalty of up to 20% of the total marks gained by the student 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: (i) satisfactorily completing the examination and assignments; and (ii) obtaining at least 50% of the total weighted marks available for 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:
In a Closed Examination, candidates are allowed to bring only writing and drawing instruments into the examination.
- 7 Examination period when Deferred/Supplementary examinations will be held:
Any Deferred or Supplementary examinations for this course will be held in the Semester 3 examination period or as advised by the Examiner.
- 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. Students must retain a copy of each item submitted for assessment. This must be produced within five days if required by the Examiner. In accordance with University's Assignment Extension Policy (Regulation 5.6.1), the examiner of a course may grant an extension of the due date of an assignment in extenuating circumstances.
- 10 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.
- 11 In order to attend laboratory classes, students must provide and wear appropriate personal protective equipment. This shall include a laboratory coat, closed in shoes, and safety glasses. Such equipment must be approved by supervising staff. Failure to provide and

wear the appropriate safety equipment will result in students being excluded from classes.

OTHER REQUIREMENTS

- 1 A Course Assignment Cover Sheet must be signed and attached to the front of any assignments/reports.
 - 2 All assignments/reports must be word-processed and follow the formatting requirements provided.
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