



The University of Southern Queensland

Course specification

Description: Entomology

| Subject | Cat-nbr | Class | Term | Mode | Units | Campus |
|---------|---------|-------|---------|------|-------|-----------|
| BIO | 3312 | 50261 | 1, 2006 | ONC | 1.00 | Toowoomba |

| | |
|-----------------------------------|--------|
| Academic group: | FOSCI |
| Academic org: | FOS002 |
| Student contribution band: | 2 |
| ASCED code: | 010915 |

STAFFING

Examiner: Mark Sutherland

Moderator: John Dearnaley

REQUISITES

Pre-requisite: BIO2103

RATIONALE

This course places considerable emphasis on the applied entomology most relevant to south-east Queensland. The student receives a basic grounding in the morphology, physiology, behaviour and taxonomy of Australian insects then is introduced to the important areas of economic entomology and integrated pest management. Included in the course is some relevant laboratory work and the requirement to submit an extensive insect collection. These are intended to give students practical experience in the identification of insects and in current pest management practices.

SYNOPSIS

THIS COURSE IS OFFERED ONLY IN ODD-NUMBERED YEARS. The course has a strongly applied basis, with nearly half the hours allotted to field and laboratory assignments, consisting of an insect collection (including economic species). Lectures are supportive, surveying structure and function, and in some detail, principles and practice of integrated pest management. Laboratory studies are closely integrated with field assignments and are mainly on basic identification of higher taxa and insects of economic importance in S.E. Queensland. This course is taught by Entomology staff from the Queensland Department of Primary Industries and Fisheries.

OBJECTIVES

On completion of this course students will be able to:

1. demonstrate an essential knowledge of insect morphology, behaviour and physiology;
2. recognize and classify the economically important insects of Queensland with emphasis on the Darling Downs region;

3. demonstrate skills in the collection of insects, their classification and mounting for permanent display;
4. demonstrate an understanding of integrated pest management practices as currently employed in Australia;
5. demonstrate competence in practical entomology in the laboratory.

TOPICS

| | Description | Weighting (%) |
|-----|--|---------------|
| 1. | General Introduction and Classification | 4.00 |
| 2. | External Anatomy | 4.00 |
| 3. | Mouthparts and Wings | 4.00 |
| 4. | Genitalia and Reproduction | 4.00 |
| 5. | Growth, Metamorphosis, Life History | 4.00 |
| 6. | Respiration | 4.00 |
| 7. | Blood Hormones and Pheromones | 4.00 |
| 8. | Digestive and Excretory System | 4.00 |
| 9. | Nervous and Sensory Systems | 4.00 |
| 10. | Social Insects | 4.00 |
| 11. | Theory of Integrated Pest Management | 8.00 |
| 12. | Insecticides | 8.00 |
| 13. | Biological Control | 8.00 |
| 14. | Microbial Control | 4.00 |
| 15. | Plant Resistance | 4.00 |
| 16. | Alternative Methods of Control | 4.00 |
| 17. | Integrated Pest Management in Queensland crops | 24.00 |

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).

Dahms, EC, Monteith, G & Monteith, S 1997, *Collecting, preserving and classifying insects*, Queensland Museum, (Booklet No. 13)

Gullan, P & Cranston, P 2000, *The insects - an outline of entomology*, Blackwell Science, Asia.

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.

Brough, EJ, Elder, RJ & Beavis, CHS 1994, *Managing insects and mites in horticultural crops*, Queensland Department of Primary Industries,

Chapman, RF 1998, *The insects structure and function*, 4th edn, Cambridge University Press, Cambridge, UK.

Corey, SA, Dall, DJ & Milne, WM (eds) 1993, *Pest control and sustainable agriculture*, CSIRO, Melbourne.

CSIRO 1991, *The insects of Australia*, 2nd edn, University Press, Australia.

(sponsored by Division of Entomology)

Elder, RJ, Brough, EJ & Beavis, CHS 1992, *Managing insects and mites in field crops, forage crops and pastures*, Queensland Department of Primary Industries,

Hadlington, PW & Johnston, JA 1982, *An introduction to Australian insects*, University of NSW Press, Kensington, NSW.

Horn, DJ 1988, *Ecological approach to pest management*, Guilford Press, New York.

Metcalf, RL & Luckman, WH 1982, *Introduction to insect pest management*, 2nd edn, John Wiley & Sons, New York.

Pedigo, LP 2002, *Entomology and pest management*, 4th edn, Prentice Hall, Upper Saddle River.

Swaine, G, Ironside, DA & Corcoran, RJ 1991, *Insect pests of fruit and vegetables*, 2nd edn, Queensland Department of Primary Industries,

Swaine, G & Ironside, DA 1983, *Insect pests of field crops in colour*, Queensland Department of Primary Industries,

Wood, P et al 2000, *Crop insects: the ute guide: northern grain belt*, Queensland Dept of Primary Industries, Toowoomba.

(ISBN: 0734501269)

STUDENT WORKLOAD REQUIREMENTS

| ACTIVITY | HOURS |
|---------------------------------|-------|
| Examinations | 6.00 |
| Laboratory or Practical Classes | 42.00 |
| Lectures | 26.00 |
| Private Study | 96.00 |

ASSESSMENT DETAILS

| Description | Marks out of | Wtg(%) | Due date |
|------------------------------|--------------|--------|-----------------------------|
| 2HR CLOSED THEORY TEST | 25.00 | 25.00 | 07 Mar 2006 (see note 1) |
| INSECT COLLECTION | 25.00 | 25.00 | 07 Mar 2006 (see note 2) |
| ASSESS PRACTICAL PERFORMANCE | 0.00 | 0.00 | 07 Mar 2006 (see note 3) |
| 2 HR CLOSED THEORY EXAM | 25.00 | 25.00 | END S1 (see note 4) |
| 2 HOUR CLOSED PRAC EXAM | 25.00 | 25.00 | END S1 (see note 5) |

NOTES

1. Examiner will advise the date of the mid-semester test (Struct./Function/Biol)
2. The insect collection due date is the End of Semester. Check with Examiner as to the actual due date.
3. Examiner to advise details regarding Assessment of Practical Performance
4. Examination dates will be available during the Semester. Please refer to the examination timetable when published. This exam is a 2hr closed theory exam - integrated pest management
5. 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 the practical component satisfactorily, students must obtain at least 50% of the marks available and submit a satisfactory insect collection. To complete the theory component, students must obtain at least 50% of the marks overall in theory exams.
- 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 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 of the current academic year.
- 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 the 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.