School of Biological Sciences | Te Kura Pūtaiao Koiora

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

General Course Information | Ngā Whakamārama 2025

BIOL 211
Insect Biology

0.125 EFTS 15 Points
Semester 1, 2025

Description | Whakamahuki

Insects are one of the most diverse and successful group of organisms on Earth. Insects exhibit a startling array of life-history strategies, forms and functions, and they affect all aspects of our daily lives. Without insects, ecosystems as we know them would cease to exist. Entomology is not just about naming and classifying species, it is about discovering the evolutionary relationships among organisms, learning how species interact with each other to shape community structure, and applying detailed knowledge of insect biology to practical human problems. The aim of this course is to provide a fundamental grounding in insect biology that is essential for both theoretical and applied ecologists working in terrestrial environments. The course will cover the diversity, evolution, systematics, physiology, ecology and behaviour of insects. Lectures will also cover some applied aspects of insect biology. Insect Biology is particularly important for students pursuing third year courses in ecology, physiology and behaviour, and those intending to continue to graduate work with insects.

Learning Outcomes | Hua ako

As a student in this course, I will develop:

- An understanding of the evolutionary origin of distinct groups of insects, the diversity of insect orders and their unique identifying features
- An understanding of insect form and function and the adaptions of insects to environmental challenges
- An appreciation of the diverse ecological roles performed by insects
- Practical skills including insect collection, preservation, and identification

Transferable Skills | Pūkenga Ngaio

As a student in this course, I will develop:

- Skills in taxonomic identification of insect orders. The process of taxonomic classification is fundamental to advancement in biology and ecology, as well as your own understanding of ecosystems
- The ability to organise the collection of field data, practical field skills, and the organisation of samples and processing post field collection

Teaching team | Kāhui ako

Rob Cruickshank (course co-ordinator) rob.cruickshank@canterbury.ac.nz	Beatrice Tinsley, Room 309 369 1391
Frank Ashwood	School of Forestry
Morgane Merien	Canterbury Museum
Technician Claire Galilee Claire.galilee@canterbury.ac.nz	Rm 317 Biology 369 5149

Assessment | Aromatawai

1. **Science communication**, 15%, due 3pm Friday 2 May

Individually, or in pairs, you will create, an 8+ page zine focussed on a particular order of insects of your choice. Your zine must contain accurate factual information and visual material which is either your own original work or that you have copyright permission to use (public domain, creative commons licenced, etc.) and is correctly attributed. You will be marked on scientific accuracy and creativity.

2. **Practical assessment** (open book), 15%, 3pm-4.30pm Friday 16 May

This will be a 90-minute practical test in which you will be given a range of insect specimens to identify. As well as identifying them, you will be expected to explain the diagnostic features you used to arrive at your identification.

3. **Written assessment** (closed book), 15%, 3pm-4.30pm Friday 23 May

This will be a 90-minute written test, taken in class, consisting of short answer questions. There will be no essay questions.

4. **Oral assessment** (closed book), 15%, 3pm-6pm Friday 30 May

This will be a 10-minute face-to-face conversation in which you will be asked two questions about topics covered in the course. The first question will be the same for everyone, and the second will be chosen at random from a list of five. You will be given all six of the questions in advance to help you prepare. In your answers you will be expected to refer to specific examples mentioned during the course, and to use appropriate scientific terms, phrases, and language.

5. **Insect collection**, 40%, due 6pm Friday 30 May

You will be expected to collect, curate, identify and present at least 30 insect specimens, representing at least 10 different orders, and 20 different families. Your specimens should be appropriately curated and labelled. You will be marked on the range of species represented, the quality of your curation and labelling, and the accuracy of your identification.

There is no exam for this course

Lecture & Lab Schedule

Lectures are in A9, Labs are in Forestry 152

Week 1	Tue 18 Feb, 2-3	**NO LECTURE**
	Wed 19 Feb, 3-4	Lecture 1: Introduction to invertebrates, arthropods & insects
	Fri 21 Feb, 3-6	Lab 1: Insect collecting 1
Week 2	Tue 24 Feb, 2-3	Lecture 2: Key features of insects
	Wed 25 Feb, 3-4	Lecture: 3 Life cycles, growth & development
	Fri 28 Feb, 3-6	Lab 2: Insect collecting 2
Week 3	Tue 4 Mar, 2-3	Lecture 4: Insect orders 1
	Wed 5 Mar, 3-4	Lecture 5: Insect orders 2
	Fri 7 Mar, 3-6	Lab 3: Insect collecting 3
Week 4	Tue 11 Mar, 2-3	Lecture 6: Focus on flies
	Wed 12 Mar, 3-4	Lecture 7: Focus on phasmids
	Fri 14 Mar, 3-6	**NO LAB** – use the time for more insect collecting on your own
Week 5	Tue 18 Mar, 2-3	Lecture 8: Taxonomy & nomenclature
	Wed 19 Mar, 3-4	Lecture 9: Museum collections
	Fri 21 Mar, 3-6	Lab 4: Curation techniques – pinning, card pointing & labelling
Week 6	Tue 25 Mar, 2-3	Lecture 10: Insect morphology 1
	Wed 26 Mar, 3-4	Lecture 11: Insect morphology 2
	Fri 28 Mar, 3-6	Lab 5: Insect morphology lab
Week 7	Tue 1 Apr, 2-3	Lecture 12: New Zealand's insect fauna
	Wed 2 Apr, 3-4	Lecture 13: Insect conservation
	Fri 4 Apr, 3-6	Lab 6: Insect orders lab
MID-SEMESTER BREAK		
Week 8	Tue 29 Apr, 2-3	Lecture 14: Arachnids, and other arthropods
	Wed 30 Apr, 3-4	Lecture 15: Soil invertebrates
	Fri 2 May, 5-8	Lab 7: Light trapping (sun sets at 5.30pm) **Note: this optional lab is later than usual**
Week 9	Tue 6 May, 2-3	Lecture 16: Insects & plants 1
	Wed 7 May, 3-4	Lecture 17: Insects & plants 2
	Fri 9 May, 3-6	Lab 8: Insect identification – Hemiptera + minor orders
Week 10	Tue 13 May, 2-3	Lecture 18: Predators, parasites & parasitoids 1
	Wed 14 May, 3-4	Lecture 19: Predators, parasites & parasitoids 2
	Fri 16 May, 3-6	Lab 9: **Practical assessment** followed by Insect identification – Diptera + Hymenoptera
Week 11	Tue 20 May, 2-3	Lecture 20: Insect chemical ecology
	Wed 21 May, 3-4	Lecture 21: Social insects
	Fri 23 May, 3-6	Lab 10: **Written assessment** followed by Insect identification – Coleoptera + Lepidoptera
Week 12	Tue 27 May, 2-3	Lecture 22: Wrap up
	Wed 28 May, 3-4	**NO LECTURE**
	Fri 30 May, 3-6	Lab 11: **Oral assessment** + help with finishing off **Insect collection**

Academic Policies | Herenga Akoranga

Want your best grades?
We highly recommend that you make use of the Academic Skills Centre | Pokapū Pūkenga Ako: https://www.canterbury.ac.nz/study/study-support-info/study-support/academic-skills-centre, which is free to all UC students and includes online resources, short courses, and individual 50-minute or drop-in 5 minute appointments for help improving assignments.

Disability or Medical condition?
Students with a disability or medical condition are advised to contact the Student Accessibility Service (SAS), especially if you intend to participate in lab or field trip activities. https://www.canterbury.ac.nz/life/accessibility

The Student Accessibility Service (SAS) assists students with disabilities by providing appropriate, disability-related study support services and specialist resources such as practical support, assistive technology, information in alternate and accessible formats and special arrangements for exams.

Behaviour
UC promotes a world class learning environment, where students are free to pursue academic interests in an environment that balances individual rights and collective responsibilities. Please familiarise yourself with the UC Student Code of Conduct: https://www.canterbury.ac.nz/about-uc/corporate-information/codes-of-practice/student-code-of-conduct

All members of the UC community are bound by the laws of New Zealand. Any breach of the law will be referred to the appropriate authorities for investigation. UC regards harassment of any kind, whether on or off campus, as unacceptable. UC reserves the right to take action to prevent the occurrence or recurrence of harassment and to prosecute offenders: see the Prevention of Harassment and Bullying Policy: https://www.canterbury.ac.nz/about-uc/corporate-information/policies/prevention-of-harassment-and-bullying-policy

The University has several other key policies and procedures that apply to staff and students, available via the UC Policy Library: https://www.canterbury.ac.nz/about-uc/corporate-information/policies

Course Feedback
Class reps are student representatives who provide an important link between classes and lecturers by acting as a liaison. Class reps are the first point of contact for help resolving class issues at a low level, helping to avoid bigger problems later. Class reps also provide the UCSA with student views and help them keep in touch with issues and concerns. We ask for reps at the start of the course – if you are considering the role, note that it makes for a nice addition to your CV.

If you would like further explanation of an assessment mark received, see the marker first. If you feel that your work has not been marked fairly, see the course coordinator who may have the work re-assessed. If there is a problem relating to the course, attempt first to resolve it by discussing it with the lecturer (possibly via the class rep). If there is no resolution, see the course coordinator. Should there remain issues, you can

approach the Head of Department, or seek advice from the University Grievance Advisor, or the UCSA. More information of the concerns and complaints process is found here: https://www.canterbury.ac.nz/life/support-and-wellbeing/raise-a-concern

Grading
A uniform grading scheme is used in the School of Earth and Environment:

A+	90-100%
A	85-89%
A-	80-84%
B+	75-79%
B	70-74%
B-	65-69%
C+	60-64%
C	55-59%
C-	50-54%
D	40-49%
E	0-39%

Special Consideration
For assessment items worth ≥10%, you may apply for special consideration if your performance is affected by extenuating circumstances beyond your control (e.g. illness, injury, bereavement or another critical circumstance). Applications are made via: https://www.canterbury.ac.nz/study/study-support-info/study-related-topics/special-consideration. Prior to applying for such consideration, check with your course coordinator in case other options are more appropriate (e.g. an extension).

Extensions and Late Work
Extensions are given in exceptional circumstances of illness, accident or bereavement (not for workload issues). If you require an extension, you must ask the course coordinator, who is the only one able to give extensions. The policy for assessments submitted after the deadline without an approved extension is:

- ≤ 24 hours late: 5% reduction in grade
- 24 hrs – 3 days: 10% reduction in grade
- 3 – 7 days: 15% reduction in grade
- > 7 days: Work will not be graded or earn credit.

Dishonest and Improper Practices
Every year several students fail undergraduate courses due to dishonest or improper practices. These include, but are not limited to, copying other students' work, copying, or not correctly citing, quoting and/or referencing web or literature sources, plagiarism, sharing UC login details, and bringing notes into a closed-book exam. Please note that in many courses, assignments are processed through the plagiarism checking tool Turnitin to check for copying within years, with previous years, across published and online literature and information sources, and to store work for comparison with future courses. When submitting your work on LEARN you are required to declare your honesty via a tick-box before submission.

Students are offered help in 100-level courses to understand what plagiarism and other types of inappropriate academic practice are, and how to avoid them. A useful guide can

be found at: https://www.canterbury.ac.nz/study/study-support-info/citations-and-referencing. Ultimately, it is YOUR responsibility to make sure you know what dishonest practice academic practices are and to avoid them. Do not share electronic copies of individual coursework with other students – if you do and this work is submitted in part of or whole by another, then you will face consequences, alongside the copier of your material. If someone needs help, provide verbal advice – do not share your files.

If your assignment contains problematic material, you will be invited to meet with the Head of Department and course coordinator to explain. If you choose not to meet, or cannot offer acceptable explanation, then you may receive a zero grade of be referred to a UC proctor for investigation. Your UC grades may be withheld until the case is resolved. If you are found guilty of any kind of dishonest academic practice, your details will be recorded on the university's dishonest practice register for 10 years.

Useful Links

Resources to support your learning: https://www.canterbury.ac.nz/study/study-support-info/study-support/academic-skills-centre/asc-resources
Academic Integrity: https://www.canterbury.ac.nz/about-uc/what-we-do/teaching/academic-integrity
Misconduct procedures (PDF): https://www.canterbury.ac.nz/content/dam/uoc-main-site/documents/pdfs/b-policies/Misconduct-Procedures-Guide-for-Students-uc.pdf.coredownload.pdf