Te Kura Pūtaiao Koiora
School of Biological Sciences

Ngā whakamārama / Course Information – 2021

BIOL371
Evolutionary Ecology

0.125 EFTS 15 Points
Semester 1

Whakamahuki / Course description

Evolutionary ecology is the branch of ecology that considers how organisms have evolved to become adapted to their environment and how they interact with members of their own, and other species. It considers the evolutionary effects of competitors, mutualists, predators, prey and pathogens. Unifying ideas in this course are evolution within ecological timeframes and evolutionary mechanisms leading to the evolution of new species.

Āhuatanga Taura / Graduate Profile

This course will provide students with an opportunity to develop several UC Graduate Attributes (GP) and Kaupapa (K) (www.canterbury.ac.nz/study/graduateprofile/students/what-are-the-graduate-attributes/):

• GP1 Critically competent in a core academic discipline.
• GP2 Employable, innovative and enterprising.
• GP3 Biculturally competent and confident: K1 A process of self-reflection on the nature of 'knowledge', K5 The process of colonisation and globalisation and 'norms' K7 Application of bicultural competence and confidence.
• GP5 Globally aware

Goals of the course

To introduce the discipline of evolutionary ecology and develop an understanding of the interplay between ecology and evolution**.**
To comprehend the relevance of evolutionary ecology in applied areas such as climate change, conservation and invasion biology.

Hua ako / Course learning outcomes and Aromatawai / Associated assessment

As a student in this course I will develop the ability to:

- have a critical appreciation of current questions and approaches in evolutionary ecology (*assessment task: quizzes, final exam,GP1,GP3, GP5; K1, K7*).
- understand how evolutionary processes underpin ecological interactions (*assessment task: quizzes, essay, final exam, GP1,GP2, GP5; K5, K7*).
- appreciate the roles of observational, experimental and comparative evidence in answering questions of evolutionary ecology (*assessment task: final exam and oral presentation, GP1,GP2, GP3, K1*).

- synthesise and critically assess primary scientific literature in order to be able to summarise scientific papers in the form of an essay and an oral presentation (*Assessment task: essay, oral presentation GP2*).
- Synthesise primary scientific literature able to generate a clear and concise argument in support of a perspective (*assessment task: final exam, GP2*).

***Pūkenga ngaio* / Transferable skills**

The following skills are developed in this course:

- ***Synthesising and interpreting information*.** In everyday life and in many job situations you will be required to read information from different sources, construct your own understanding and shape your own viewpoint. In lectures and tutorials we will discuss recent research papers in a group environment and this will develop your abilities to identify the essential elements of research outputs - you will then use in your talk and essay writing. *(GP1, GP2, GP5)*
- ***Ability to find relevant information in the popular and scientific literature*** As part of the essay assignment you will learn how to identify and access current and relevant information. (*GP1 & 2*)
- ***Presenting a scientific talk***. The scientific talk has become one of the most important communication forums for the scientific community; more people are likely to listen to you talk than read your paper. In many ways your research reputation will be enhanced (or diminished) by your scientific talk. We have developed tutorials to help you create a good talk and provide opportunities for you to present your talk in a conference situation. *(GP1 & 2)*
- ***Work in a team.*** You will work in teams to prepare and present your conference papers. *(GP2)*

Timetable

Check timetable for updates and location. http://www.canterbury.ac.nz/theuni/timetable/

Quizzes: Each week for 11 weeks there will be a quiz on LEARN. You will have 1 week to answer the quiz question(s) online. The quiz will open at 12pm on Monday and close 11am the following Monday. Quizzes are designed to encourage reading the papers and attending lectures whenever possible, and participating in discussions. No special considerations will be given for quizzes, but your lowest quiz score will be dropped. There will be 11 quizzes in total.

Tutorials: tutorials are in term 1 and 2, but not every week.

There are two streams, Check timetable for time and location. The tutorials are designed to give you experience in critical assessment of recent scientific papers and ideas in the discipline, as well as oral presentation.

Course information

Course information, including the list of tutorial streams, will be posted on LEARN.
All lecture handouts will be on LEARN, as well as audio files of each lecture. Quizzes on lecture material will be available on LEARN. These are not assessed, but are to help you in your understanding of lecture material.

Pūkenga / Teaching staff

Lecturers	Office	Phone extn	Email
Dr Hazel Chapman [1]	SBS2 335	95140	hazel.chapman@canterbury.ac.nz

Prof Dave Kelly	SBS2 339	95182	dave.kelly@canterbury.ac.nz
Dr Sarah Flanagan	SBS 520..	90433	sarah.flanagan@canterbury.ac.nz
Dr Amy Osborne	SBS5…	92532	amy.osborne@canterbury.ac.nz

You can call the phone extensions from off campus by calling 3642 987 and then entering the extension number.

[1]Hazel Chapman is the course co-ordinator so contact her for any enquiries to do with the course

***Aromatawai* / Assessment**

Conference presentation 1	Term 1	10%
Conference presentation 2	Term 2	10%
Essay Due in Friday May14th 5pm	Term 2	20%
Quizzes (1 per week for 10 weeks)	Term 1&2	10%
Final Exam		50%
Total		100%

The conference presentation dates are listed in the Lecture Outline below.

LITERATURE

There is no single textbook required for this course because currently there are few text books on evolutionary ecology, and none of them are particularly good. During the course each lecturer will identify key books and scientific papers relevant to each lecture. We will ensure the most current literature is available to you on LEARN. **To do well in final exam you must show evidence that you have read and understood this material.**

Two useful evolutionary textbooks are**:** 1) *Evolutionary Analysis* by Scott Freeman and Jon Herron 3rd or 4th ed. Available in the bookshop and in library QH 366.2 .F855. On reserve.

2) *An Introduction to Evolution* 2005 Stearns & Hoekstra QH 366.2 .S799 On reserve.

BIOL 371 LECTURE *Wātaka* / Timetable, 2021 Draft

No	Date	Who	Lecture topic	Tute
1	Feb 22	HC	An introduction to evolutionary ecology	No tutorial
2	Feb 26	HC	Natural selection and adaptation	
3	March 01	HC	Rapid adaptation in todays world	Introduction HC
4	March 05	HC	Quantitative variation & heritability	
5	Mar 08	HC	Measuring heritability	Conference 1 prep HC
6	Mar 12	HC	Measuring heritability and response to selection	
7	Mar 15	SF	Genes in populations	Conference 1 HC
8	Mar 19	SF	Measuring selection- population genetics	
9	Mar 22	SF	Measuring selection - genomics	
10	Mar 26	SF	Applications genomics	
11	Mar 29	AO	Epigenetics	
	April 26		ANZAC day	
12	April 30	AO	Epigenetics (cont)	
15	May 03	DK	Levels of selection - genes	Conference 2 Prep SF
16	May 07	DK	Levels of selection - organelles to genomes	
17	May 10	DK	Levels of selection (cont)	Conference 2 SF
18	May 14	DK	Extinction 1	
19	May 17	DK	Extinction 2	
20	May 21	HC	Speciation 1	
21	May 24	HC	Speciation 2	
22	May 28	HC	Life history evolution 1	
23	May 31	HC	Life history evolution 2	
24	June 04	HC	Maintenance of sex	

Feedback from Course Survey 2019

The following issues were raised in written feedback by students at the end of the course, and the responses were collated by the course coordinator and common responses scored. **Action taken in response to feedback is indicated in bold.**

Which aspects of this course were most positive? :

The enthusiasm of the lecturers.

Loved the presentations!

The feedback was really helpful.

How could this course be enhanced to assist your learning? :

Increase the % mark of the conference talks.
We have done this; this year the conference talks together are worth 20% of your total mark.

Minimal guidance on essay, and having it so early in the term, with some content based on topics still to be taught…
The essay is now due in after the mid-term break. The essay is specifically designed to introduce a new topic into the course, so we won't have covered it in lectures.

We have also introduced weekly quizzes to assist in learning

Note: By taking this course students agree that all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Terms and Conditions of Use posted on the Turnitin.com site.

RULES, REGULATIONS, AND WHAT TO DO WHEN THINGS GO WRONG
[updated 3 April 2020]

If in doubt: ASK! The course coordinator is happy to answer questions at any time. All staff involved in the course are available for advice on specific issues.

What do I do if I have to miss something or if my performance was impaired?
If you feel that **illness, injury, bereavement or other extenuating circumstances beyond your control** prevented you from completing an item of assessment worth 10% or more of the total course assessment or if these circumstances affected your performance in such assessments, you should apply for Special Consideration. Applications for Special Consideration should be submitted via the Special Consideration website http://www.canterbury.ac.nz/study/special-consideration/ *within five working days* of the assessment or its due date. You will also need to notify the course coordinator. If you apply for Special Consideration because of medical reasons, you should visit a doctor within a reasonable timeframe (application form available on the website above or from the Student Health Centre).
The Special Consideration provisions are intended to assist students who have covered the work of a course but have been prevented by illness or other critical circumstances from demonstrating their mastery of the material or skills at the time of assessment – they do not excuse you from doing the assessment within a reasonable time agreed with the course coordinator. You should expect to be required to submit additional work if you miss a major assignment (e.g., a field trip for which a major write-up is required).
You should also apply for Special Consideration if you are not be able to complete an assessment or attend a field trip because of **involvement in international or national representative sport or cultural groups**. Please review the Special Considerations policy, because very few kinds of activities will be eligible for such consideration (e.g., holiday trips, birthday parties, etc. are not given special status in the University policy).

Students prevented by extenuating circumstances from completing the course after the final date for withdrawing, may apply for Special Consideration for late discontinuation of the course. Applications must be submitted via http://www.canterbury.ac.nz/study/special-consideration/ no later than five working days after the examination period has finished.

Plagiarism
It is essential you are aware that plagiarism is considered a very serious offence by the academic community, the University and the School of Biological Sciences. Plagiarism is defined as taking content from another work or author and presenting it, without attribution, as if it is your own work. Content here

includes text (sentences or major parts of sentences), display items (graphs and tables), and overall structure (the detailed sequence of ideas).
Plagiarism includes:
• re-use of previous assignments (even if each individual sentence has been rephrased to say the same thing in different words, or if the overall structure is re-used).
• copying of another student's work (with or without their consent).
• the unreferenced use of published material or material from the internet (e.g., cutting and pasting of paragraphs or pages into an essay).
For most pieces of in-term assessment you will be given information concerning the use of direct and indirect quotes from previously published work. If you have any doubt about the appropriate use of published material, please speak with an academic staff member. If you are unsure about what plagiarism is, seek advice.
It is a School policy that courses may request that you submit work electronically for subsequent analysis of originality using *Turnitin*. Students agree that by taking courses in BIOL, assessments may be submitted to Turnitin.com for textual similarity review. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Terms and Conditions of Use as posted on the Turnitin.com site.

Where do I hand in assignments and then collect them once marked?
All assignments should be placed in the designated collection boxes in the foyer of the 2nd floor of the School of Biological Sciences (Julius von Haast building, at the top of the stairs), unless directed otherwise by the course coordinator. All assignments must be accompanied by a cover sheet signed by you stating that the submitted work is not plagiarised. Cover sheets are available on top of the collection boxes, or you can download one from the Biology website (http://www.canterbury.ac.nz/media/documents/science-documents/assignmentcoversheet.pdf). In addition, you may also be asked to submit your work electronically (via Learn) for analysis in *Turnitin*. Marked assignments can be collected from the School of Biological Sciences reception, unless directed otherwise by the course coordinator. Teaching staff will endeavour to return work as soon as possible, and should contact you if there are likely to be any delays that will prevent return within the maximum 4-week timeframe.

What if I can't get it finished in time?
Reports and assignments should be handed in on time. Extensions may be granted if you have a valid reason. **If you require an extension, you should request one from the course coordinator** (or the lecturer responsible for marking the work), with as much notice as possible. Please do this BEFORE the deadline for the assignment. **If you have been given an extension you should hand the work DIRECTLY to the course coordinator** (do not put it in the drop box as it may not be cleared after the due date). If an extension has not been granted:
• work handed in within 1 hour of the deadline: penalty of up to 5 percentage points of the mark for the assignment (e.g., a mark of 75% might be reduced to 70%).
• work handed in 1 – 24 hours after the deadline: penalty of 10 percentage points of the mark for the assignment (e.g., a mark of 75% is reduced to 65%).
• work handed in 1 – 7 days after the deadline: penalty of 15 percentage points of the mark for the assignment (e.g., a mark of 75% is reduced to 60%).
• work handed in more than 7 days after the deadline will not be marked or earn credit.

What if I have written more than the word or page limit?
If there is a word limit on an assignment, it is usually there to stop you doing too much work and to encourage you to write succinctly. You can be up to 10% over without too much worry, but if the length increases beyond that your mark may suffer due to failure to follow the requirements. If you find yourself way over the word limit talk to the lecturer concerned about how to get your assignment to an acceptable length.

What if I fail part of the course?
In Biological Sciences, we require a satisfactory level of achievement in both the theoretical aspects of the discipline and in practical activities. This means you must attend all class activities and submit all items of assessment unless you have a very good reason not to (e.g., medical reasons). **A student must attain an average score of at least 40% for in-course assessments (e.g., assignments, reports) and an average score of at least 40% in the exam and/or tests, AND score at least 50% overall for the course, to be awarded a passing grade. See the course outlines for clarification of the assessment items included in each category and ask the coordinator if you are still unsure.**

What's the best way to give feedback?
We welcome constructive feedback at all times – help us to make this a valuable course for you. We endeavour to remain approachable at all times. If you would rather give feedback anonymously, please use the online course survey or talk to lab demonstrators or your class rep (who will all report back to the staff-

student liaison committee that includes a representative from each of the undergraduate classes). Class representatives will be selected from each class at the start of course.

What's the best way to complain?

If you feel you have not been fairly treated during this course, please raise the issue with the lecturer or course coordinator in the first instance. Other avenues include your class rep., who can raise issues anonymously, or the UCSA education coordinator.

Grading

A+ 90% or above
A 85 – 90
A- 80 – 84
B+ 75 – 79
B 70 – 74
B- 65 – 69
C+ 60 – 64
C 55 – 59
C- 50 – 54

A restricted pass (R) **may** be awarded to those who are close to a pass (i.e., an overall score of 48-49.9%) AND who have achieved at least a 40% overall score in both in-course assessment and tests/exams. If an R grade is awarded you gain credit for the course but **cannot continue into papers that require this course as a prerequisite**.

NB: The R grade is only available at 100 and 200 level - it cannot be awarded for third year papers.

Failing grades: D 40-49 E 0–39