

## BIOL378

### Population Ecology and Conservation

0.125 EFTS, 15 Points. First Semester

#### Description / *Whakamahuki*

The course teaches advanced principles of population ecology and practical ecology skills in a New Zealand context. The course covers **population ecology** (the study of single species, including their interactions with other species), **and its applications to conservation**. We cover a range of current topics, illustrated with NZ examples. We also emphasise **practical skills** with the field trip and assessment focused on this. Additional reading of recent books and scientific papers is an essential complement to the lectures. Basic ecological background is assumed; if you feel that you are missing some assumed background, see the reference materials listed below or talk to the lecturers.

#### Intended Learning Outcomes (*Hua Akoranga*) and Associated Assessment (*Aromatawai*)

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

- Understand current topics in population ecology and their application to conservation  
(*assessment: final exam*)
- Develop practical skills including species identification, experimental design, data analysis  
(*assessment: field trip lab test; field trip short report*)
- Improve scientific communication skills, especially report writing and use of the literature  
(*assessment: field trip short report*)
- Conduct field work safely (*field trip preparation and conduct*)

#### Transferable Skills Register / *Pūkenga Ngaio*

*As a student in this course, I will develop the following skills:*

- Discovery, synthesis and interpretation of information. *Combining information from lectures, course readings, the literature, and field trip in discussions on the field trip and in course assessment.*
- Formation of hypotheses and explanations. *The field trip will include discussions of results as they come in, to develop hypotheses that can be expanded on in your short field trip report.*
- Conducting safe field work in hazardous outdoor environments. *You will be given forms before the field trip which you will use to identify, eliminate, mitigate or minimize hazards.*
- Knowledge of field sampling methods in terrestrial ecology, and plant and animal identification *We will practice a range of field methods; the field trip lab test will assess identification skills.*
- Data analysis and interpretation. *Initial analysis of field trip data will be run on the trip, and appropriate further analysis methods discussed on site for you to use in your short reports.*
- Writing a report in scientific format using text and graphs. *Initial graphs will be discussed on the field trip, and you will be given information about style, good graph design etc for use in your short reports.*

#### Pre-requisites

BIOL 270 Ecology and BIOL 209 Biological Data Analysis

## Teachers / *Pūkenga*

\*Prof Angus McIntosh, Julius von Haast, phone 3695186, email [angus.mcintosh@canterbury.ac.nz](mailto:angus.mcintosh@canterbury.ac.nz)

Dr Sara Kross, contact details to be confirmed.

Kim Doherty (laboratory and field trip co-ordinator), room Julius von Haast 318, ext 95202, [kim.doherty@canterbury.ac.nz](mailto:kim.doherty@canterbury.ac.nz)

\* Angus is the course coordinator/ *Kairuruku Akoranga*

## Course Times

The course has **lectures in only Term 1**. There are no laboratories, instead there is a **compulsory field trip** in the mid-semester break, which leads to two tutorials in Term 2 then the field trip report is due. Check the UC timetables for timetable and room allocations.

The field course will teach practical skills in including identification, sampling, analysis and writing. It will involve day trips from campus from **Sunday 10 April till Wednesday 13 April**. More details will be given in Term 1. Our risk assessment for the field trip requires that **participants must have full covid vaccination to attend the field course**.

## BIOL 378: Lecture Timetable 2022

Week	Date	Lecture Number and Topic
1	Feb	<b>Sara Kross: Species interactions</b>
		21 1. Course intro/ why save species
		22 2. Ecosystem services and conservation targets
2	March	23 3. Drivers of biodiversity decline
		28 4. Methods to measure and classify risk of extinction
		1 5. Population dynamics I
3		2 6. Population dynamics II
		7 7. Habitat loss and fragmentation I
		8 8. Habitat loss and fragmentation II
4		9 9. Conservation in working landscapes
		<b>Angus McIntosh: metapopulations and conservation</b>
		14 10. Distribution patterns and rarity: the biodiversity crisis
5		15 11. Population dynamics & environmental change: marmots
		16 12. Population persistence: koalas
		21 13. Persistence in the face of predation: whio & takahē
6		22 14. Metapopulation dynamics: persistence in fragmented landscapes
		23 15. Adaptive management approaches
		28 16. Influences of food-web interactions on management
7	March	29 17. Pest and predator control
		30 18. Captive management
		April 6 <i>Online lecture test</i>
<b>Mid-semester break: Field trip, 10-13 April.</b>		
8	May 4	Tutorial for field trip report
9	May 11	Tutorial for field trip report
10	May 18	<i>Field trip report due</i>
<b>Mid-year break: final exam</b>		

## Assessment

**10%** online lecture test (open for 24 hrs from 5 pm **Weds 6 April**) -*lecture concepts*

**10%** practical test (**during field trip**) -*field identification skills*

**30%** field trip report (due **Wed 18 May** by 5:00 pm) -*scientific writing skills*

**50%** final exam, two hour duration -*concepts, theories, knowledge of literature*

See below for departmental policies on late work, illness, and work that exceeds the length limits.

Note: Biology policy says that to pass the course you need a mark of at least 50% overall, AND at least a 40% average across the interm work (online lecture test, lab test, and short report) and at least a 40% average in the final exam (see departmental policies below for more detail).

## Textbook

Instead of a textbook, we will make specific recent research articles available through Learn. For background, we recommend the current BIOL 270 text: Smith & Smith (2015) *Elements of Ecology* (9th edition) or the previous text for BIOL270, Begon, Howarth & Townsend (2014) *Essentials of ecology* 4th edition (copies in the UC libraries).

## Feedback from Course Surveys

The last course survey was in 2017.

Standard questions	2017 (n = 28, 88%)
Q1 - The materials provided helped me to understand what was required to succeed in this course.	4.5
Q2 - The organisation of this course helped me learn.	4.4
Q3 - I found the workload was appropriate to the level of the course.	4.5
Q4 - I found the assessments appropriate for the course.	4.6
Q5 - Where I sought feedback on my assessments, I found it helpful.	4.3

Here are some detailed points raised in it, with our responses.

*There should be an option to sit the exam soon after the course work finishes as you forget most of the stuff by the time of midyear exams*

This is not as simple as it seems. Only the lectures finish in Term 1. The field trip is in the April break, which produces data for the field trip writeup (20% of the assessment) with tutorials in the first two weeks of term 2 and the project due in the third week of Term 2. So the gap between finishing course work and the start of the exam break in June is only three weeks. Since there would be timetabling problems about finding a time to run an exam towards the end of Term 2, we have left the final exam in the June break. But we have introduced an online lecture test at end of Term 1 to get some of the lecture assessment out of the way while the material is still fresh.

*Fantastic field trip and array of investigations was very beneficial. The short report was a good test for writing skills in comparison to some other longer report writing in other courses.*

Thanks for the comment. The short report is very concise (900 words), to keep the workload appropriate for a 15 point course, but note that you have to edit the text carefully to fit your arguments into that short space. Allow some time for editing, and use the tutorials (see next comment).

*Tutorial sessions were really helpful for the report writing. In particular I found this particularly useful for help with the statistics.*

Glad that worked out, we put those tutorials in place (in response to earlier feedback), specifically to help with stats and writing in the report.

## RULES, REGULATIONS, AND WHAT TO DO WHEN THINGS GO WRONG

**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 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/> and you need to notify the course coordinator *within five days* of the assessment or its due date. If you apply for Special Consideration, because of medical reasons, you should visit a doctor within 24 hours of the assessment (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).

In rare cases you may not be able to complete an assessment or attend a field trip, because of **involvement in international or national representative sport or cultural groups**. In such cases you should also apply for Special Consideration. Please review the Special Considerations policy because very few kinds of activities will be eligible for 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/> within five days of the end of the main examination period for the semester.

### Plagiarism

It is essential that 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, 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 are in any doubt about appropriate use of published material, please speak with a member of academic staff. If you are still unsure what plagiarism is, then seek advice.

It is a School policy that courses may request 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 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 box in the foyer of the 2nd floor of the School of Biological Sciences (Von Haast building, near the main reception), 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/assignment-coversheet.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 must be handed in by the due date to gain full credit
- work handed in up to 7 days after the deadline will be marked, but the marks will be discounted 25% before they are recorded to the student's credit
- any work handed in more than 7 days after the deadline date 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. It also makes things easier to assess. 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 pre-requisite**. 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