School of Biological Sciences
Te Kura Pūtaiao Koiora

Course Information - / ***Ngā Whakamārama*- 2024**
Version: 17 Dec 2023

BIOL425
Freshwater Ecology
0.125 EFTS

Description / *Whakamahuki*
The aim of this course is to give students an understanding of current issues in freshwater ecology with particular reference to ecological theory, and the application of research to management and conservation issues in New Zealand. An additional goal is to equip students with the skills needed by professionals working in freshwater-related areas of research, consultancy, and management.

Intended Learning Outcomes and Associated Assessment
As a student in this course, I will develop the ability to:

- Acquire an in-depth appreciation of important concepts in freshwater ecology (*assessment: online posts, Trends paper and final test*; GP1, GP5)
- Evaluate the processes that control the structure and functioning of freshwater ecosystems at a variety of scales ranging from individuals to ecosystems and landscapes, and including the role(s) of abiotic factors and processes (*assessment: online posts and final test*; GP1, GP5)
- Apply ecological knowledge to solve problems in freshwater ecosystems (*assessment: online posts and final exam*; GP1, GP2, GP3, GP4)
- Synthesize scientific literature to provide appropriate background, context and interpretation for issues in freshwater ecosystems (*assessment: online posts, trends paper and final test*; GP1, GP5)
- Critique and develop research and biomonitoring methodologies used by freshwater ecologists (*assessment: field trip long report*; GP1, GP2)
- Be a professional freshwater ecologist including knowledge of the roles of scientists, consultants, managers, and stakeholders groups (GP2, GP4).

Transferable Skills Register
As a student in this course, I will develop the following skills:

- Synthesis & interpretation of information. *Research findings will be discussed in all sessions, and implementing this skill will be important in all course assessment.* GP1, GP5.
- Formation of hypotheses & explanations. *Developing explanations for patterns and observations is important to developing an understanding of concepts. We will encourage this through discussions online and in seminars and feedback online posts.* GP1
- A broad understanding and appreciation of biculturalism in Aotearoa New Zealand as it applies to freshwater species as taonga and mahinga kai. GP3.
- Develop a high level of communication skills appropriate for a number of audiences. *Through online posts, seminar discussions and the writing of a modern synthesis article with an emphasis on informative graphics you will learn to communicate to a variety of audience*. GP2.

GP1, GP2, etc, refer to Graduate Profile attributes: (1) Critically competent in a core academic discipline of their degree; (2) employable, innovative and enterprising; (3) biculturally competent and confident; (4) engaged with the community; and (5) globally aware.

Teachers / *Pūkenga*

Tadeu Siqueira, *Course co-ordinator*, Julius von Haast 318, tadeu.siqueira@canterbury.ac.nz
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Assessment - *Aromatawai*

The course will be assessed on three components reflecting the learning goals:

Item	Due	Weighting
Online forum contributions	Before and after each seminar	24 % (6 x 4 %)
Trends/Frontiers article	Wednesday 9 May	36 %
Final exam	Week of 19 June	40 %

Specific details on each of these assessments will be given out closer to the time of each.

Online forum contributions – to gain the 4% for a seminar you need to make *insightful* online postings on Learn as part of the preparation for the seminar, you need to attend the seminar and participate in discussion, and you need to contribute to online summary postings after the seminar. See information below for what we are looking for.

Trends/Frontiers article –production of an article in the style of either *Trends in Ecology and Evolution* or *Frontiers in Ecology and the Environment* on a freshwater ecology topic. These publications contain short reviews of current research that through synthesis and interpretation coupled with colour graphics, identify important concepts, applications and insights originating from recent research.

Final Test – essay questions covering material discussed during seminars. The date of the final exam will be announced by the 4th year Co-ordinator later in the year.

Programme and classes

We will use the course contact time for a variety of activities using a format designed to enhance your learning across all the course learning goals (see timetable below). This format will take advantage of the opportunities for online interaction provided by the UC Learn system, as well as focusing class time on the learning goals of the course. Some course sessions will be dedicated to development of skills associated with particular items of assessment. The others will be dedicated to face-to-face discussions following online discussion forums.

With this course format we intend to help you develop better professional practice by dedicating class time to discussion and feedback of the assignment you will be working on, as well as to the seminar topics. The seminar discussions will be shorter, but moving some discussion to an online format makes class time discussions more focused, and will also allow more considered discussion participation and individual time management. The overall approach is expected to be participatory and regular attendance at course seminars as well as contributions to online discussions is essential (and required). This course will only work if you are on time for formal seminars. Those not able to attend should contact the seminar facilitator ASAP prior to the seminar.

Timetable – *Wātaka*

Specific seminar topics for 2024 to be confirmed.

ISO(semester week) **Date**	**Who** **Time (check CIS for locations!)**	**Details** **(name in timetable)**	**Assessment**
8(1) Thurs, 22 February	Angus, Jono & Tadeu 1:00-1:50 pm	Introductory meeting (Tutorial B)	
9(2) Thurs, 29 February	Angus 1:00 – 2:30 pm	Seminar Topic 1: Measuring freshwater ecosystem health: how does eDNA stack up? (Tutorial A)	Online posts (4%)
10(3) Thurs, 7 March	Angus, Jono & Tadeu 1:00-2:50 pm	Trends/Frontiers article preparation (Tutorial B)	
11(4) Thurs, 14 March	Jono 1:00 – 2:30 pm	Seminar Topic 2: Flow regimes (Tutorial A)	Online posts (4%)
12(5) Thurs, 21 March	Angus, Jono & Tadeu 1:00-2:50 pm	Trends/Frontiers article workshop (Tutorial C)	
13(6) Thurs, 28 March	Tadeu 1:00 – 2:30 pm	Seminar Topic 3: Applied freshwater metacommunities (Tutorial A)	Online posts (4%)
14-17	BREAK + ANZAC Day		
18(7) Thurs, 2 May	Angus 1:00 – 2:30 pm	Seminar Topic 4: Freshwater invasions (Tutorial A)	Online posts (4%)
19(8) **Thurs, 9 May**			**Trends/Frontiers article due (36%)**
20(9) Thurs, 16 May	Jono 1:00 – 2:30 am	Seminar Topic 5: Giving rivers room to move (Tutorial A)	Online posts (4%)
22(10) Thurs, 30 May	Tadeu 1:00 – 2:30 am	Seminar Topic 6: Freshwater translocations (Tutorial A)	Online posts (4%)
23 Starts Mon, 12 June	Revision week		
24 Starts Mon 19 June	Exam period		Open book final exam (40%)

Seminar sessions

Each of the six seminars will usually consist of:

a) A limited number of starter papers allocated to the class (on Learn) to read, depending on length and focus;
b) Your contributions (at least 2 posts) to an online forum for each seminar (using Learn), including [i] insightful comment on the allocated reading and [ii] insightful comment based on additional reading (at least one paper) you have done (including posting the bibliographic info and link);
c) Your contributions to the 90-minute seminar discussion in the face-to-face class itself; and
d) Contributions to synthesis of the seminar posted online after the seminar.

Prior to each seminar we expect you to have scoped out the issues and complexities of the topic, including posting comments online on the allocated and additional reading. This will prepare you for the class discussion, give you more opportunity to think deeply about the issues and to form your own ideas, and build your experience in finding literature on a topic to develop an in-depth understanding. As a consequence, we expect the 90-min discussions, although shorter, to be more penetrating and focused. To score well for participating in a seminar, you need to do all of 'a-d' described above.

The key to you getting the most out of this course is to actively participate. It is absolutely essential that everyone in the class should read all the starter papers set for each session and contribute to discussion. Basically we are looking for insightful discussions. In your postings prior to and after the seminars, you should:

- Critique the work, highlighting any deficiencies in methods or particularly innovative approaches/ideas.
- Identify the most important issues associated with the topic; what are the big questions, or gaps in knowledge?
- Agree or disagree with others, but always be respectful of their opinions.
- Provide <u>your</u> thoughts on the topic.
- Try to put the work in context e.g., what are the implications of the work for freshwater ecologists/managers?
- Outline questions or issues, together with your opinion, to start discussion.
- Provide references (and links to) an additional paper(s) that you consider has something important to say about the topic/question. Don't go over the top here. If there are newer (or older) papers that you think are useful – tell the class!
- The most important job is to <u>get to the heart of the issues</u> and <u>identify questions</u> so we can have a fruitful and well-directed discussion in class.
- To ensure there is useful online discussion and that people do not leave the reading till the last minute, you need to: (1) make insightful posts (regurgitation of papers or abstracts is not what we're after), (2) make at least one post on the Friday before the Monday seminar, (3) make all your pre-seminar posts at least *by noon on the day before* the seminar, make post-seminar posts within 48 hours of the seminar, and (5) keep postings short (ideally <150 words).

RULES, REGULATIONS, AND WHAT TO DO WHEN THINGS GO WRONG
[updated January 2023]

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

What do I do if I have to miss a test/exam or if my performance was impaired?
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 (labs, tutorials, fieldtrips)** and submit all items of assessment unless you have a very good reason not to (e.g. medical reasons) and if this has been approved by your course coordinator.

If you feel that **illness, injury, bereavement or other extenuating circumstances beyond your control** prevented you from completing a **test/exam** 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 should also 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 a text/exam – **they do not excuse you from doing the test/exam** within a reasonable time agreed with the course coordinator.

What do I do if I have to miss a quiz or assignment or if I need an extension?
You cannot apply for Special Consideration if you miss an assessment that is not a test/exam, such as a quiz, lab report, essay, literature review or other assignment, or if the test/exam is worth less than 10% or more of the total course assessment. If this happens or if you need an extension because of **illness, injury, bereavement or other extenuating circumstances beyond your control**, please contact the course coordinator and arrange an alternate activity and/or submission date. You should also do this if you have to miss a laboratory, tutorial or field trip.

What are other valid reasons to miss an assessment or mandatory course activity?
The Special Considerations policy (https://www.canterbury.ac.nz/about/governance/ucpolicy/student/special-consideration-procedures-and-guidelines/) outlines only a few kinds of activities that UC considers valid reasons for missing an assessment or mandatory course activity other than those outlined above. These include **involvement in international or national representative sport or cultural groups.** Holiday trips, birthday parties, weddings, work-related commitments etc. are not given special status in this University policy. Please contact your course coordinator to ask for an alternate activity and/or submission date if you are eligible.

Special Consideration for late discontinuation of a course

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.

Academic Integrity
It is the responsibility of each student to be familiar with the definitions, policies and procedures concerning academic misconduct/dishonest behaviour. Instances of academic misconduct will be dealt with in a serious and appropriate manner. Students should refer to: https://www.canterbury.ac.nz/about/ako/academic-quality/academic-integrity/

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 have any doubt about the appropriate use of published material, please speak with an academic staff member. If you are unsure what plagiarism is, seek advice.

It is a School policy that courses will likely 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 submitted as directed by the course coordinator. Typically, this will be electronically via Learn for on-line grading and for analysis in *Turnitin*. If a hard copy is requested, 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). 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).

Marked assignments will be returned through Learn or, if in hard copy, 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 (see above). **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 and you have been asked to submit a hard-copy of your work, 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. Unless specifically advised that there is flexibility, you must adhere to the word limit indicated.

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, quizzes) 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