

Waterways Centre for Freshwater Management

Course Information / *Ngā Whakamārama* - 2019

WATR 203

Freshwater Science field skills

0.125 EFTS 15 Points

Summer School

Description / *Whakamahuki*

This course provides an introduction into the fundamental field skills used by freshwater ecologists. It covers topics on basic water chemistry, hydrology, in-stream physical habitat, identifying and sampling aquatic plants, benthic invertebrates and fish. By the end of the course students will have basic skills for developing and conducting freshwater biomonitoring programs. The course is an intense and “hands on”, with laboratory and practical field work each day. It provides a sound building block for any students wishing to advance in freshwater ecology study and is also an applied re-fresher for freshwater professionals.

Learning Outcomes / *Hua ako*

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

- Develop an understanding of the tools used by practicing freshwater ecologists and their application to management of freshwater ecosystems (*assessment: practical test and bioassessment report*) GP1, 2 & 5
- Understand through experience the characteristics of differing freshwater ecosystems (e.g. streams, rivers and lakes), and the connections of people, including Māori, with those ecosystems. (*discussions during practical field sessions*) GP3 & 4
- Develop practical skills including being able to measure and assess water chemistry, physical habitat and species identifications (*assessment: taxonomic identifications & application of principles in the field; and practical test*) GP1 & 2
- Improve scientific communication skills, including report writing (*assessment: discussions in the laboratory and field and final report*) GP 1 & 2
- Conduct field work safely (*conducting field work*) GP 2

Transferable Skills / *Pūkenga Ngaio*

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

- Gain an understanding of field sampling protocols for freshwaters, conducting water quality testing, sampling aquatic plants, and identification of benthic invertebrates and fish. *We will carry out a range of exercises to illustrate useful field methods; the practical field work will assess identification skills.* GP1&2
- Discuss concepts and design of biomonitoring. *The Final Report will involve development of a biomonitoring program.* GP2

- Conducting safe field work in hazardous outdoor environments. *We will discuss health & safety in the field and will occur focus on identifying, eliminating, mitigating or minimizing hazards.* GP2
- Writing a report in scientific format. *Discussion in lectures and labs about key concepts in robust design will be conducted.* GP2
- Be aware of the nature of multiple cultures in Aotearoa New Zealand as it applies to freshwater native species as taonga and mahinga kia. *We will discuss Māori perspectives on water and mahinga kia (freshwater food).* GP3.

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.

Teaching team / Kāhui ako

Course co-ordinator: Prof Jon Harding, Julius von Haast 333, jon.harding@canterbury.ac.nz
 Dr Helen Warburton, Julius von Haast 331, helen.warbuton@canterbury.ac.nz
 Prof Angus McIntosh, Julius von Haast 226, angus.mcintosh@canterbury.ac.nz

Course Times & locations

The course runs three weeks in the Summer Semester. However of this only five days are contact days which student must attend, these are 18th-22nd November. The course includes lectures, laboratories and field sampling each day. There are pre-course and post-course tasks.

Lectures and laboratories will be held at University of Canterbury and Lincoln University.

Communications about Course timings and activities will be through the course LEARN site. Lincoln students will be given details on how to access this site.

Assessment / Aromatawai

- 20% Pre-assessment tasks (due 18th November 9am)
- 10% Course participation and skills proficiency (during the Course)
- 30% Practical test (22nd Nov am)
- 40% Final biomonitoring report (due 29th Nov 5pm)

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

Any application for an extension must be made in writing (generally by email) to the Course Co-ordinator and any granting of an extension will be made by email.

Field work

To attend this course you need to be capable of safely carrying out physical activities in the outdoors including walking in rivers, ponds, and riverbeds, and confident working in wadeable flowing and standing waters.

Indicative Course Content

Date	Timings	Activity	Staff
11 th Nov	Students do not attend sessions	Pre-assessment	
18 th Nov Day 1	9 – 10am 10 - 11am 11-12 12-1pm 1- 5pm	Course Introduction Water chemistry Algae Lunch Fieldwork: Coes Ford, Te Waihora	Jon Helen Tara All
19 th Nov Day 2	9 -10am 10-12pm 12-1 pm 1-5 pm	Intro benthic invertebrates Lab: IDing Lunch Fieldwork: Otukaikino Okuiti	Jon Jon & Helen Jon & Helen
20 th Nov Day 3	9 -10am 10-11.30am 11.30-12.30 pm 12.30 – 4.30 pm	Lab: ID field samples Lectures: Fish & Birds ID Lunch Field sampling: Ashley River	Jon & Helen Angus All
21 st Nov Day 4	9 -10am 10-12pm 12-1 pm 1-2 pm 2 – 5 pm	Lecture: Fishing methods Fieldwork Lunch Biomonitoring Fieldwork	Angus All Jon All
22 nd Nov Day 5	10-11am 11-12pm 12-1 pm 1-3 pm	Practical test Restoration & Conservation Lunch Field visit	 Guest practioners
28 th Nov	Students do not attend sessions	Final report due 5pm	

Useful texts

- Winterbourn, M.J. ; Gregson, K.L.D. 1981: Guide to the aquatic insects of New Zealand. ENTOMOL. SOC. N.Z. BULL.: 5:1-80
- Harding, J.S., Clapcott, J.E., Quinn, J.M., Hayes, J.W., Joy, M.K., Storey, R.G., Greig, H.S., Hay, J., James, T., Beech, M.A., Ozane, R., Meredith, A.S., Boothroyd, I.K.G., (2009). *Stream Habitat Assessment Protocols for wadeable rivers and streams of New Zealand*. University of Canterbury, Christchurch, New Zealand, 133p.
- Stark, J.D., Boothroyd, I.K., Harding, J.S. Maxted, J.R., Scarsbrook, M.R. (2001). Protocols for sampling macroinvertebrates in wadeable streams. New Zealand Macroinvertebrate Working Group Report No. 1., Ministry for the Environment, Wellington. 57 p.

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

[updated 12 June 2018]

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 <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 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/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