

## Course outline | Ngā Whakamārama 2024

**BIOL212-24S1(C) Semester 1, 2024**

**Introduction to Marine Biology and Ecology**

0.125 EFTS (15 Points)

### **Course Description | Whakamahuki**

This course provides an introduction to the biology and ecology of the marine environment. It includes descriptions and analyses of marine communities and the biodiversity, ecology and adaptations of marine organisms. It is an integrated approach to the ecology of marine organisms, their interactions, biotic and abiotic drivers that influence patterns and ecological processes across temperate estuaries, nearshore rocky reefs, deep water pelagic and benthic communities, tropical and polar biomes. The course also examines human impacts on the marine environment, including fisheries and marine conservation. The field trip and laboratory sessions are an integral part of the course and are designed to complement lectures.

### **Course Co-ordinator | Kairuruku Akoranga**

Dr John Pirker - Room 236, School of Biological Sciences, ext 95201 or direct dial 369 5201

[john.pirker@canterbury.ac.nz](mailto:john.pirker@canterbury.ac.nz)

### **Lecturers | Pūkenga**

Dr Mads Thomsen - Room 233, School of Biological Sciences, ext 95208 or direct dial 369 5208

[mads.thomsen@canterbury.ac.nz](mailto:mads.thomsen@canterbury.ac.nz)

Dr Sarah Flanagan - Room 520, School of Biological Sciences, ext 90433 or direct dial 369 0433

[sarah.flanagan@canterbury.ac.nz](mailto:sarah.flanagan@canterbury.ac.nz)

Assoc Prof. Michelle LaRue - Room 414, Gateway Antarctica, ext 90639 or direct dial 369 0639

[michelle.larue@canterbury.ac.nz](mailto:michelle.larue@canterbury.ac.nz)

### **Course Technician**

Jan McKenzie [jan.mckenzie@canterbury.ac.nz](mailto:jan.mckenzie@canterbury.ac.nz)

### **Course goals:**

The course is designed to illustrate the principles of marine biology and ecology, including the physical and biological aspects of marine biodiversity and community function.

### **Feedback from the 2022 Course survey (73.2% response)**

- |  |     |
|--|-----|
| 1. Materials provided helped me understand what was required to succeed in this course | 4.2 |
| 2. The organisation of this course helped me learn                                     | 4.2 |
| 3. Workload was appropriate to the level of the course                                 | 4.3 |
| 4. Assessments were appropriate for the course   | 4.1 |
| 5. Where I sought feedback on my assessments I found it helpful                        | 4.0 |

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

### *Positive features*

- Good workload factoring in the field trip, labs and report
- Lectures all good, textbook is actually quite fun to read (a rarity!)
- I really enjoyed the field trip! I felt it helped a lot with my understanding
- Lecturers are awesome and always ready to help when you ask
- The labs were awesome and quizzes good.

### *Negative features (Action/response indicated in bold)*

- Many students are only just now taking Biostats (I am taking it next sem). The expectations for the statistics side of the course are a little high in my opinion. There definitely needs to be more help sessions and tutors for stats help.
- The feedback from the short report took a bit too long as this would have been helpful for writing the long report.
- Sometimes I was a little lost in the lectures, but again that might be because I didn't do 113.
- **The course is constantly being refined and updated; students should see the benefits of this.**
- **We will endeavor to provide feedback on reports in a timelier fashion**
- **We note that in 2022 coursework, including laboratories and field trips, was impacted by Covid.**

### **Graduate Profile | Āhutatanga Taura**

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

- GP1 Critically competent in a core academic discipline.
- GP2 Employable, innovative and enterprising.
- GP3 Bi-culturally competent and confident: K1 A process of self-reflection on the nature of 'knowledge' and 'norms', K2 The nature of contemporary Māori organisational structures e.g. rūnanga, hapū, iwi, iwi corporations, K3 Traditional and contemporary realities of Māori society e.g. tikanga and kawa, te reo Māori, K4 The Treaty of Waitangi and Aotearoa New Zealand's Bicultural history, K5 The process of colonisation and globalisation, K7 Application of bicultural competence and confidence in a chosen discipline and career.
- GP4 Engagement with community.
- GP5 Globally aware.

### **Intended learning outcomes | Hua Akoranga and associated assessment |Aromatawai**

*At the end of the course, students will have developed the ability to:*

- Demonstrate knowledge of the diversity in form and function of organisms across a variety of ecosystems (assessment task: on-line quizzes & final exam)

**Related graduate attributes:** GP1, GP2 (K1, K3), GP5

- Demonstrate knowledge of select fisheries and conservation management strategies in relation to other indigenous models New Zealand | Aotearoa, Customary Protections Areas (assessment task: on-line quizzes & final exam)  
**Related graduate attributes:** GP1, GP2, GP3 (K1-7), GP4 GP5
- Use taxonomic keys to identify marine organisms (assessment task: laboratory writeup and field trip project report)  
**Related graduate attributes:** GP1, GP3 (K3), GP5
- Acquire basic skills in field observation, experimental sampling, data analysis and interpretation (assessment task: field trip projects)  
**Related graduate attributes:** GP1, GP2, GP3 (K1-5, K7), GP5
- Synthesise primary scientific literature, reports and iwi management plans/documents to support field and laboratory work (assessment task: field trip project and laboratory writeup)  
**Related graduate attributes:** GP1, GP2, GP3 (K1-5, K7), GP5

### **Transferable Skills | Pūkenga Ngaio**

*The following skills are developed in this course:*

- Linnaean and Māori taxonomic identification of marine organisms. The process of taxonomic classification is fundamental to advancement in biology and ecology, as well as your own understanding of ecosystems.  
**Related graduate attributes:** GP1, GP2, GP3 (K5, K7), GP5
- Synthesising information from primary literature including mātauranga Māori. This is a skill that underpins the advancement of science and management, and the reflexive development of your own understanding.  
**Related graduate attributes:** GP1, GP2, GP3 (K1-5, K7), GP5
- Collecting field data / data sovereignty. Important for Māori, community and research, and in scientific organisations.  
**Related graduate attributes:** GP1, GP2, GP3 (K1-5, K7), GP5
- Analysing data. Important for Māori, community and research, and in scientific organisations.  
**Related graduate attributes:** GP1, GP2, GP3 (K1-5, K7), GP5
- Writing a report on findings. Communication of science to different audiences is fundamental to its use and advancement.  
**Related graduate attributes:** GP1, GP2, GP3 (K1-5, K7), GP5

**Lectures: Two lectures a week. Dates, times, and locations are subject to change, so please check your timetable closer to the start of the Semester (<https://courseinfo.canterbury.ac.nz/>).**

Tuesday 2-3pm and Friday 9-10am ([Psychology - Sociology 252 Lecture Theatre](#))

### Laboratories:

Two labs will be run on Monday 1-4pm (Stream 1) and Thursday 12-3pm (Stream 2), during weeks 12 and 13 of Term 1, [West 436](#). No bare feet or jandals or eating of food in the lab.

### Compulsory field trip:

The first-semester lecture break includes a three-day trip (excluding travel): 5 – 8 April (trip 1), 8 – 11 April (trip 2). Dates and the number of streams may change depending on class numbers. You will be advised of the field trip details early in the first term. Note that the field trip is **compulsory and provides in-term assessment**. If you miss the field trip without a valid reason, you may not be allowed to sit the final exam.

### Electronic Distribution of Course Material

Information about the course, including the course handout, will be placed on Learn.

### Course assessment | Aromatawai

10% labs – Lab, internal assessment - due after mid-term break, on 26<sup>rd</sup> April

10% (2 x 5%) multiple-choice quizzes (internal assessment). These [20 questions] will be online for completion in your own time on the course Learn site for two days (opening 12 noon, on 26<sup>th</sup> March and 28<sup>th</sup> May).

5% short field trip assessment (internal assessment) – due on day 1 of the field trip

5% field trip data analysis (internal assessment) – due on completion of the field trip

**20% major field trip report (internal assessment) – due Friday 17<sup>th</sup> May.**

**50% final exam**

### Textbooks:

The textbook for the course is **Castro & Hubber, “Marine Biology”**.

Castro, P. and Huber, ME. (2019) *Marine Biology 11<sup>th</sup> Ed.* McGraw-Hill. **QH 91.C355 2013**

Recommended reading for additional information on invertebrates

Rupert, EE., Fox, RS. and Barnes, RD. (2004) *Invertebrate zoology: A functional evolutionary approach* 7<sup>th</sup> ed. Brooks/Cole. **QL 362.B261 2004**

### Lecture and lab Outline | Wātaka

Week	Date	Lecture	Lecture Topic	Labs/assessments
8	20/2/24	1	Introduction to marine ecosystems (JP)	
	23/2/24	2	Oceanography (JP)	
9	27/2/24	3	Phytoplankton (JP)	
	01/3/24	4	Macroalgae (JP)	
10	05/3/24	5	Simple and colonial invertebrates (JP)	
	08/3/24	6	Higher invertebrates (JP)	
11	12/3/24	7	Pipe fish / Plankton / Permits (SF)	
	15/3/24	8	Fish (MT)	
12	19/3/24	9	Reptiles, birds and mammals (MT)	1. Algae (Lab)
	22/3/24	10	Introduction to marine ecology (MT)	
13	26/3/24	11	Rocky intertidal (MT)	2. Invertebrates (Lab) Quiz 1 (26 <sup>th</sup> March, on-line). Lectures 1-10 (5%)
	30/3/23	12	GOOD FRIDAY – NO LECTURE	

14-16			<b>Vacation and field trips</b> (JP, MT, JM)	Trip 1, 5-8 April Trip 2, 8-11 April
17	23/4/24	13	Continental shelf: rocky systems (MT)	
	26/4/24	14	Sedimentary intertidal and estuaries (MT)	Lab write up due 26 April, 10%
18	30/4/24	15	Continental shelf: subtidal sediments and seagrass (MT)	
	3/5/24	16	Field trip tutorial (MT, JP)	
19	7/5/24	17	Mangroves and coral reefs (MT)	
	10/5/24	18	Life near the surface - pelagic (MT)	
20	14/5/24	19	Polar biology and ecology - Michelle LaRue	
	17/5/24	20	Deep sea zonation and habitats: Adaptations of deep sea invertebrates (JP)	Field Trip Long Report (due 17 <sup>th</sup> May, 20%)
21	21/5/24	21	Adaptations of deep sea fishes (JP)	
	24/5/24	22	Marine fisheries (JP)	
22	28/5/24	23	Marine reserves (JP)	Quiz 2 (28 May, on-line). Lectures 11-22 (5%)
	31/5/24	24	Marine conservation (JP)	

## **RULES, REGULATIONS, AND WHAT TO DO WHEN THINGS GO WRONG** [updated March 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.
- the generation of text using artificial intelligence technology without disclosure and when it is not intended to be part of an assignment.

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

John Pirker BIOL212 December 2023