

BIOL1002: Organisms to Ecosystems

Callaghan

Summer 2 - 2024



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

OVERVIEW

Course Description This course introduces the taxonomic and functional diversity of organisms together with their interactions with each other and the physical world.

Students will gain an understanding of the immense scale of biological diversity, how that diversity arose and what are the essential elements required to maintain that diversity. This course is also the gateway to real understanding of how organisms work including the development and function of multicellular organisms. This understanding of the organism will then be expanded to interactions between organisms as populations, communities and ecosystems. Understanding how organisms and ecosystems function enables us to move towards living systems that are aligned with natural processes and are essential ingredients to sustainability.

Students who have completed this course are well placed to study further studies in: animal and plant development and function; microbiology; ecology, biodiversity and environmental biology courses at 2000 and 3000 level.

Academic Progress Requirements Nil

Requisites This course has similarities to BIOL1070 and BIOL1050. If you have successfully completed either of these courses you cannot enrol in this course.

Assumed Knowledge HSC Chemistry
HSC Mathematics Advanced or HSC Mathematics Standard

Contact Hours **Callaghan Lecture**
Face to Face On Campus
52 hour(s) per term
Total hours to be spread across a normal semester term or compressed into a summer/winter term

Unit Weighting Workload 10
Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

COURSE OUTLINE

CONTACTS

Course Coordinator	Callaghan Ms Chloe Peneaux Chloe.Peneaux@newcastle.edu.au Consultation: Email for any questions or to organise Zoom consultation.
Teaching Staff	Other teaching staff will be advised on the course Canvas site.
School Office	School of Environmental and Life Sciences Room C228 Chemistry Building Callaghan Science-SELS@newcastle.edu.au +61 2 4921 5080 9am-5pm (Mon-Fri)

SYLLABUS

Course Content	Ecosystems are made up of a diversity of organisms which interact with each other & the physical environment to perform ecosystem functions. Origin and Scale of Diversity: • Evolving life & mechanisms of evolution • Origin of species • Coping with complexity - classification & relatedness Biology of Organisms: • Diversity, development & function of plants & animals Ecology and Evolution: • Theory of Natural Selection • Evolutionary processes • Population & Community ecology
Course Learning Outcomes	On successful completion of this course, students will be able to: <ol style="list-style-type: none">1. Explain biodiversity and its evolutionary history;2. Define biological terminology in relation to tissues, organisms, ecology and ecosystems;3. Recognise the diversity of the form, development and function of multicellular organisms, particularly plants and animals;4. Explain the concepts of micro and macro evolution and speciation and describe mechanisms underpinning taxonomic and functional diversity;5. Explain concepts of evolutionary processes and population and community ecology;6. Apply critical thinking and the scientific approach to interpret biological information in the form of diagrams, graphs, tables and text.
Course Materials	Other Resources: lecture notes, recordings, assessment quizzes and other resources course will be available via the course Canvas site. Make sure you visit - the Canvas site on a regular basis to stay up to date. Recommended Text: Science 6th Ed (Global Edition) Freeman et al. (2017). Pearson Education Available as either a hard copy or an e-text from: https://www.pearson.com/store/p/biological-science-global-edition/P200000004228/978-1292165080?tab=overview

SCHEDULE

Week	Week Begins	Topic	Learning Activity	Assessment Due
1	15 Jan	Plant Biology: Diversity, Form and Function; Reproduction; Water and Sugar Transport; Signalling	Textbook Readings: Chapters 28, 34, 35, 36, 37 and 38 Practice Quiz 1	
2	22 Jan	Animal Biology: Diversity, Form and Function; Representative Protostome and Deuterostome Animals; Reproduction	Textbook Readings: Chapters 30, 31, 32, 39 and 47 Practice Quiz 2	Assessment Quiz 1 due by 11.59pm, Thursday 25th January
3	29 Jan	Evolution and Ecology: Evolution by Natural Selection; Evolutionary Processes; Population Ecology; Community Ecology	Textbook Readings: Chapters 22, 23, 51 and 52 Practice Quiz 3	Assessment Quiz 2 due by 11.59pm, Thursday 1st February
4	5 Feb	Revision	Revision	Assessment Quiz 3 due by 11.59pm, Thursday 8th February
Examination Period				

ASSESSMENTS

This course has 2 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Exam	During Formal Examination Period	Individual	50%	1, 2, 3, 4, 5, 6
2	Quiz-Online	11.59pm on Thursdays of Week 2, 3, and 4 (see Schedule)	Individual	50%	1, 2, 3, 4, 5, 6

Late Submissions

The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

This course has 2 assessments. Each assessment is described in more detail in the sections below.

REMINDER: while the course will be taking place online, the final examination has to be taken ON CAMPUS. It is not possible to take the final examination remotely.

Assessment 1 - Exam

Assessment Type	Formal Examination
Purpose	Formal Examination
Description	The final formal examination is designed to test the individual student's knowledge of the course material and their ability to describe, analyse and hypothesise from this material. The formal exam will be sat ON CAMPUS under invigilated conditions (note: it is not possible to sit the exam remotely). The exam will be multiple-choice style through Canvas with closed access to the internet and course content.
Weighting	50%
Length	2 hours
Due Date	During Formal Examination Period
Submission Method	Formal Exam
Assessment Criteria	Correct responses to questions
Return Method	Not Returned
Feedback Provided	No Feedback

Assessment 2 - Quiz-Online

Assessment Type	Quiz
Purpose	To assess student understanding of concepts presented throughout the course.
Description	Online multiple-choice quizzes
Weighting	50%
Due Date	11.59pm on Thursdays of Week 2, 3, and 4 (see Schedule)
Submission Method	Online
Assessment Criteria	Correct responses to questions
Return Method	Online
Feedback Provided	Online - Online - Correct answers to questions along with verbal feedback will be provided on Canvas following the due date.

ADDITIONAL INFORMATION

Grading Scheme

This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.

*Skills are those identified for the purposes of assessment task(s).

Communication Methods

Communication methods used in this course include:

- Canvas Course Site: Students will receive communications via the posting of content or announcements on the Canvas course site.
- Email: Students will receive communications via their student email account.

Zoom Q&As will be organised weekly with the possibility of organising F2F sessions if required.

Course Evaluation

Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.

Oral Interviews (Vivas)

As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the [Oral Examination \(viva\) Procedure](#). In cases where the oral examination reveals the assessment item may not be the student's

own work the case will be dealt with under the [Student Conduct Rule](#).

Academic Misconduct All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to <https://policies.newcastle.edu.au/document/view-current.php?id=35>.

Adverse Circumstances The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where:

1. the assessment item is a major assessment item; or
2. the assessment item is a minor assessment item and the Course Co-ordinator has specified in the Course Outline that students may apply the online Adverse Circumstances system;
3. you are requesting a change of placement; or
4. the course has a compulsory attendance requirement.

Before applying you must refer to the Adverse Circumstance Affecting Assessment Items Procedure available at:
<https://policies.newcastle.edu.au/document/view-current.php?id=236>

Important Policy Information The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures at <https://www.newcastle.edu.au/current-students/respect-at-uni/policies-and-procedures> that support a safe and respectful environment at the University.

This course outline was approved by the Head of School. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.

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