

Marine Megafauna: Sentinels of the Sea 2305ENV - Tri 2 2020 to Tri 2 2020 - Gold Coast Campus - In Person

1. General Course Information

1.1 Course Details

Course code	2305ENV
Course title	Marine Megafauna: Sentinels of the Sea
Academic organisation	ESC School of Environment and Science
Trimester	Trimester 2 2020 to Trimester 2 2020
Mode	In Person
Level	Undergraduate
Location	Gold Coast, On Campus
Credit point value	10

Course Description:

This course is restricted to students in one of the following degrees: Bachelor of Marine Science (1328), Bachelor of Science (1018, 1210, 1330) with major in Marine Biology, Bachelor of Science in Ecology and Conservation Biology (1315, 1007) with a minor in Marine Biology. Please note there are limited places, being admitted to one of these degrees does not guarantee a place in the course. Marine Megafauna: Sentinels of the Sea, spans a spectrum from fundamental vertebrate biology and ecology, to scientific communication for conservation and management. Students will gain insight into how a species' unique biology/ecology may place it at elevated risk from human impacts, and how this sensitivity can be leveraged for effective ecosystem biomonitoring. Students will gain field experience associated with long-term monitoring of humpback whales, and species surveys of other marine megafauna. On the basis of their course experience, students will be challenged to develop conservation communication and action strategies. Assumed knowledge: a background understanding of vertebrate biology, trophic interactions and anthropogenic pressures on the marine environment.

Assumed Background:

Assumed knowledge: A background understanding of vertebrate biology, trophic interactions, and anthropogenic pressures on the marine environment.

1.2 Course Introduction

Marine Megafauna: Sentinels of the Sea, takes a unique approach to exposing students to the scientific context surrounding major global environmental challenges such as climate change, habitat loss, underwater noise, plastic and chemical pollution. Charismatic marine megafauna, such as whales, seals, dugongs, polar bears, sea-birds, sea-turtles, sharks and rays have both high societal value, as well as biologies that render them most at risk from many anthropogenic pressures. Students will gain an understanding of the physiology, biology, and ecology of these organisms and hence the elements of these that place the species or taxa at an increased risk of key anthropogenic pressures. Each component of the course will focus on key taxa, guiding the students through a theoretical basis for subsequent case study discussion and strategic investigation of the 'sentinel approach' to ecosystem biomonitoring.

Over the course of the trimester, students will participate in weather dependent field work and laboratory based prac work (*subject to COVID-19 restrictions). Planned field work entail participation in a long-term monitoring program of humpback whales, whilst the lab based practical will focus on the dissection of sea-birds for stomach content analysis. Students will gain valuable hands-on field experience in conducting marine mammal research, including survey techniques, conducting behavioural observations and improving their practical skills. The course will conclude with tutorials supporting the major assessment component, a written science communication report.

Previous Student Feedback

In previous years students have enjoyed the expertise of the lecturers and the unique boat-based field trip to observe the humpback whale research happening at Griffith. Students expressed interest in more hands-on activities, and as such a sea-bird dissection prac has been incorporated.

1.3 Course Staff

Primary Convenor
APro Susan Bengtson Nash

Phone	373 55062
Email	s.bengtsonnash@griffith.edu.au
Campus	Nathan Campus
Building	Environment 2 (N13)
Room	1.34

1.4 Timetable

Timetables are available on [the Programs and Courses website](#).

NB: Details contained in this Section of the course profile and Section 4.1 Learning Activities are to be read in conjunction with the official class timetable. The published class timetable which is the authoritative source for timetabling information for all campuses can be located by clicking on the above link.

Additional Timetable Information

Workshops:

The last hour of each weekly lecture series (11-11:50am) will be used as a workshop session for students. The purpose of workshops is to facilitate learning of the course content through group discussions, activities, and answering questions regarding recently-delivered course content, assessments, and field-work. T

Practical (*Subject to COVID-19 restrictions)

The course includes one practical focusing on a sea-bird dissection for the purpose of stomach content analysis. The laboratory report assessment is tied to this practical.

Weather-dependent field-work (*Subject to COVID-19 restriction)

The field work component of the course is schedule during the August mid-semester break. The entire week is time-tabled due to the unpredictable nature of weather conditions, and to ensure that there are no conflicts with other courses. This means that any students enrolling in this course should understand that they will need to be flexible. Whilst attempts will be made to schedule field work during the week, students may potentially need to be available on a weekend and be ready to go at 48 hours notice. Field work entails long days on a boat and is entirely weather-dependent. Appropriate inductions and risk assessments will be performed.

1.5 Lecture Capture

It is standard practice at Griffith University that lectures timetabled in lecture capture-enabled venues are recorded and made available to students on the relevant course site, in accordance with the University's [Lecture Capture Policy](#).

The lecture series delivered as part of this course will be recorded and accessible via the Learning@Griffith course site.

1.6 Technical Specifications

This course cannot be completed online

2. Aims, Outcomes & Graduate Attributes

2.1 Course Aims

There is a growing societal awareness surrounding global environmental challenges and this awareness is often manifested around the health of iconic species, such as marine megafauna. The biology of these species often makes them vulnerable to human impacts such as those associated with increased maritime activity, habitat degradation and pollution. Their sensitivity to such environmental disturbance, however, also means that these species can be used as indicators, or sentinels, of the health of the environment. Robust science is required to quantify the health of these organisms, their environment, and how that relates to human activity. Scientific outcomes must further be effectively communicated to a wide constituency including the public, NGOs, environmental regulators, managers and politicians.

This course is about whales, polar bears, turtles, sharks, and sea-birds, but it is also about the application of these charismatic megafauna as part of innovative ecosystem monitoring approaches and impactful conservation communication and action. The course will provide students with a core understanding of the biology of key taxa, how they are impacted by human activities and how they might be utilised in marine conservation, environmental monitoring and effective science communication. The course will generate critical and innovative thinking about key global environmental issues, and provide students with an opportunity to participate in active research programs and gain practical skills.

This course extends the understanding of the biology of marine organisms gained in 2303ENV (Zoology) and complements the practical aspects of 3332ENV (Marine Conservation and Management).

2.2 Learning Outcomes

After successfully completing this course you should be able to:

1 Upon Completion, students will demonstrate detailed knowledge of: 1. The biology and ecophysiology of key taxa of megafauna 2. The biological/ecological attributes of key taxa that render them susceptible to human impacts and/or as suitable sentinel species 3. The components of successful sentinel programs Further, they will be able to apply this knowledge in the design of sentinel programs, and conservation strategies utilising marine megafauna

2.3. Graduate Attributes

For further details on the Griffith Graduate please [click here](#)

Griffith University prepares influential graduates to be:

- [Knowledgeable and skilled, with critical judgement](#)
- [Effective communicators and collaborators](#)
- [Innovative, creative and entrepreneurial](#)
- [Socially responsible and engaged in their communities](#)
- [Culturally capable when working with First Australians](#)
- [Effective in culturally diverse and international environments](#)

This table demonstrates where each of the Griffith Graduate Attributes is taught, practised and assessed in this course.

For further details on the Griffith Graduate Attributes please refer to [The Griffith Graduate policy](#).

University wide attributes

Graduate Attribute	Taught	Practised	Assessed
Knowledgeable and skilled, with critical judgement	•		•
Effective communicators and collaborators		•	•
Innovative, creative and entrepreneurial		•	•

ALTC Threshold Learning Outcomes (Science) Upon completion of a Bachelor of Science, graduates will:

GRADUATE ATTRIBUTE	LEARNING OUTCOMES
1.Demonstrate a coherent understanding of science by:	
1.1. articulating the methods of science and explaining why current scientific knowledge is both contestable and testable by further inquiry	1
1.2. explaining the role and relevance of science in society	
2.Exhibit depth and breadth of scientific knowledge by:	
2.1. demonstrating well-developed knowledge in at least one disciplinary area	1
2.2. demonstrating knowledge in at least one other disciplinary area	
3.Inquiry & problem solving skills aligned with critical analysis & solving scientific problems by:	

GRADUATE ATTRIBUTE	LEARNING OUTCOMES
3.1. gathering, synthesising and critically evaluating information from a range of sources	1
3.2. designing and planning an investigation	1
3.3. selecting and applying practical and/or theoretical techniques or tools in order to conduct an investigation	
3.4. collecting, accurately recording, interpreting and drawing conclusions from scientific data	
4.Be effective communicators of science by:	
4.1. communicating scientific results, information, or arguments, to a range of audiences, for a range of purposes, and using a variety of modes	1
5.Exhibit personal & professional responsibility for learning & scientific work through:	
5.1. being independent and self-directed learners	1
5.2. working effectively, responsibly and safely in an individual or team context	1
5.3. demonstrating knowledge of the regulatory frameworks relevant to their disciplinary area and personally practising ethical conduct.	

Additional Course Information on Graduate Attributes

No additional information

3. Learning Resources

3.1 Required Resources

Details of your Required Learning Resources are available from the [Reading List](#).

3.2 Recommended Resources

Details of your Recommended Learning Resources are available from the [Reading List](#).

3.3 University Learning Resources

The University provides many facilities and support services to assist students in their studies. Links to information about University support resources that are available to students are included below for easy reference.

Readings - New online service enabling students to access Required and Recommended Learning resources. It connects to the library catalogue to assist with quickly locating material held in Griffith libraries and enables students to manage and prioritise their readings, add personal study notes and export citations.

Learning@Griffith - there is a dedicated website for this course via the Learning@Griffith at myGriffith.

Academic Integrity Tutorial - this tutorial helps students to understand what academic integrity is and why it matters. You will be able to identify types of academic misconduct, understand what skills you will need in order to maintain academic integrity, and learn about the processes of referencing styles.

Student Support - provides a range of services to support students throughout their studies including personal support such as Counselling and Health Services; Academic support; and Financial and Welfare support.

Careers and Employment Service can assist all enrolled students and recent graduates with career direction, course uncertainty, interview preparation, job search tips, LinkedIn reviews and much more. Our Unitemps Recruitment Service can assist you with finding paid casual work while you study.

Library and Learning Services: Library and Learning Services provides a wide range of quality client-focused services and programs to students, researchers and staff of the University. Library and Learning Services works in collaboration with the academic community to achieve academic and research outcomes.

Support for learning - the University provides access to common use computing facilities for educational purposes.

Code of Practice - Griffith Information Technology Resources.

3.5 Other Learning Resources & Information

There is no prescribed text for this course. Lecture content, tutorial material, and field trip materials are required and will be provided. Students are expected to find information beyond that given in lectures in their own time and on their own initiative. There are many relevant textbooks available, including in the campus library, and the most up-to-date information on current research is available from diverse electronic sources including quality knowledge-bases and original scientific publications. It is thus expected that students will show initiative in seeking such additional information, and wisdom in choosing credible, reliable and authoritative sources of such information.

4. Teaching & Learning Activities

4.1 Learning Activities

Week Commencing	Activity	Learning Outcomes
13 Jul 20 09:00 - 28 Sep 20 10:50	Course lectures (Lecture Series): A series of lectures in traditional form, but lecture-captured so that students who cannot attend can view the lecture later and students who did attend can review it as they may require.	1
13 Jul 20 11:00 - 28 Sep 20 11:50	Workshops (Workshop): The purpose of workshops is to facilitate learning of the course content through group discussions, activities, additional material, and answering questions taken from recently-delivered course content. Guidance and feedback on assessments will be provided when possible. Quizzes will also be administered during these periods.	1
10 Aug 20 06:00 - 14 Aug 20 17:00	Field Work (*subject to COVID-19 restrictions) (Field Work): A boat-based field trip Field trip is scheduled in the mid-trimester break with a focus on humpback whale research activities.	1
31 Aug 20 09:00 - 31 Aug 20 12:00	Sea-bird Dissection (Laboratory): A laboratory practical (*subject to COVID-19 restrictions) is scheduled with a focus on stomach content analysis.	1

4.2 Other Teaching and Learning Activities Information

The course consists of a coordinated set of lectures, tutorials and practicals designed to give an overview of important aspects of marine megafauna biology, ecophysiology, and environmental threats they are vulnerable to as a function of these.

Students are expected to attend all their classes every week, collect all handouts and listen to all announcements, including check their Griffith email accounts for any course-related messages before lectures, and at least twice a week.

Required materials

Electronic copies of the lecture notes, practical manual and other course material will be placed on Learning@Griffith.

In lieu of a textbook, students will be expected to explore current relevant topics in marine megafauna in their own time from authoritative sources, including high-quality websites.