COURSE OUTLINE

SCI113 Discovering Science

School: School of Science, Technology and Engineering

2026 | Trimester 1

UniSC Sunshine Coast
UniSC Moreton Bay
UniSC Fraser Coast

BLENDED LEARNING

Most of your course is on campus but you may be able to do some components of this course online.

Please go to unisc.edu.au for up to date information on the teaching sessions and campuses where this course is usually offered.

1. What is this course about?

1.1. Description

Science and the study of the universe has always inspired awe and fascination. Whether on the grand scale of big ideas, sub atomic scales or the intricate complexities of life, the urge to discover new frontiers drives us as a species. This course will spark your curiosity and engage you in the world of scientific inquiry. During lab and field activities you will explore your skills of investigation, presenting data and critical analysis and apply these across disciplines through 'Big Idea' modules that introduce you to the cutting edge of science, research and technology.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – Pre-recorded conceptual videos and associated activity	1hr	Week 1	12 times
Tutorial/Workshop 1 – On campus workshop	2hrs	Week 2	6 times
Laboratory 1 – On campus lab	3hrs	Week 1	6 times
Seminar – On campus seminar	1hr	Week 1	3 times

1.3. Course Topics

- Philosophy of science and technology
- Hypotheses, theories and evidence
- Big Ideas – from the Big Bang to DNA
- Investigative methods in science, laboratories / field trips
- Inquiry based modules; Biology, Chemistry, Maths, Biotechnology, Ecology, Food and Biosecurity.
- Scientific communication
- Ethics and sustainability
- Future frontiers for science

2. What level is this course?

100 Level (Introductory)

Engaging with discipline knowledge and skills at foundational level, broad application of knowledge and skills in familiar contexts and with support. Limited or no prerequisites. Normally, associated with the first full-time study year of an undergraduate program.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES On successful completion of this course, you should be able to...		GRADUATE QUALITIES Completing these tasks successfully will contribute to you becoming...
1	Demonstrate foundational scientific knowledge in core disciplines (biology, chemistry, math, biotechnology, ecology, food and biosecurity)	Knowledgeable
2	Apply the methods of science to collect, accurately record, interpret and draw conclusions from observational and experimental data to solve different real world problems	Creative and critical thinker Empowered
3	Explain the role and relevance of science in society and consider the impact of solutions to current and future real world problems	Ethical Sustainability-focussed
4	Communicate scientific results, information and arguments to a range of audiences, for a range of purposes and using a variety of modes.	Engaged

5. Am I eligible to enrol in this course?

Refer to the UniSC Glossary of terms for definitions of “pre-requisites, co-requisites and anti-requisites”.

5.1. Pre-requisites

Not applicable

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

Not applicable

5.4. Specific assumed prior knowledge and skills (where applicable)

Not applicable

5.5. Microcredential Information

Not applicable

6. How am I going to be assessed?

6.1. Grading Scale

Standard Grading (GRD)

High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL).

6.2. Details of early feedback on progress

Early feedback and guidance on task 1 is the subject of the week 2 tutorial. Draft feedback on the scientific report will be available from the teaching staff prior to submission.

6.3. Assessment tasks

DELIVERY MODE	TASK NO.	ASSESSMENT PRODUCT	INDIVIDUAL OR GROUP	WEIGHTING %	WHAT IS THE DURATION / LENGTH?	WHEN SHOULD I SUBMIT?	WHERE SHOULD I SUBMIT IT?
All	1	Oral and Written Piece	Group	20%	Proposal: 1 PowerPoint slide; single paragraph of accompanying text (5%) Submission: 5 PowerPoint slides with accompanying audio or text (15%)	Refer to Format	Online Submission
All	2	Quiz/zes	Individual	40%	30 minute quizzes; 10 multiple choice questions each (4 x 10% each)	Throughout teaching period (refer to Format)	Online Submission
All	3	Report	Individual	40%	2000 words	Refer to Format	Online Assignment Submission with plagiarism check

All - Assessment Task 1: Narrated PowerPoint

GOAL:	This task will develop your collaboration skills in presenting scientific ideas and research, culminating in a group submission. Key to the exercise is working with other science students in investigating the application of a field or discipline in a Mission to Mars and engaging the audience in your chosen field of study. This submission should be engaging and creative but also scientifically rigorous and concise.
PRODUCT:	Oral and Written Piece
AUTHORSHIP STATEMENT:	
FORMAT:	Submit: Proposal: Week 2; Submission; Week 5. In groups of no more than four you will investigate a proposed mission to the planet Mars. Choose one of the core science disciplines (biology, chemistry, mathematics, biotechnology, ecology, food and biosecurity) offered at USC and consider how the discipline may be applied to a single aspect of the mission. How will we get there? What spacecraft, fuels or trajectories may be used? How will humans survive the spaceflight? How will we grow food or obtain water? What basic ecology could we potentially find, if any?Are there any other issues of concern that you feel may be relevant to the mission? What biosecurity concerns are there?You will research and brain storm in your group the foundational knowledge required for the mission in your chosen discipline, some of the interesting research occurring in this field and a summary of the issues faced and possible solutions for these issues. Your group will then initially provide a single PowerPoint slide as a proposal (week 2; one per group) then submit the completed assessment (5 PowerPoint slides and accompanying audio or text) via Canvas (week 5; one per group). Additional instructions and guidance will be provided via Canvas.
CRITERIA:	
GENERIC SKILLS:	

No.		**Learning Outcome assessed**
1	Demonstrate foundational scientific knowledge in a core discipline: use of correct terminology, specific field content and applications	1 4
2	Explain the role and relevance of the chosen discipline to the proposed mission to Mars and its potential application in solving current and future real world problems	3
3	Communicate scientific information and areas of emerging research to an audience of teaching staff.	4
4	Collaborate: demonstrated equity of submission among group members	4

All - Assessment Task 2: Laboratory / Tutorial Quizzes

GOAL:	The purpose of the quizzes is to formatively assess foundational knowledge across the breadth of core science disciplines presented during the first eleven weeks of the course. The quizzes will be based on the laboratory and tutorial manual and the questions covered duringeach week's content. You will link this knowledge to the addressing of problems in the real world - highlighting further applications that may arise from research in this area.
PRODUCT:	Quiz/zes
AUTHORSHIP STATEMENT:	
FORMAT:	The format for this task will be in the form of 4 separate quizzes assessing each of the specific discipline areas presented during the course.:Week 2 - Science Basics. Week 5 - Maths and Chemistry. Week 8 - Biology and Ecology. Week 11 - Biotechnology, Food and Biosecurity. Each quiz will be open for two weeks from the opening date and will take approximately 30 minutes to complete; you will be permitted three (3) attempts at each quiz.
CRITERIA:	

No.		Learning Outcome assessed
1	Demonstrate foundational depth and breadth of knowledge in the scientific disciplines presented during the course.	1
2	Apply the methods of science to answer questions and to explain the role and relevance of the scientific disciplines presented during the course	2
3	Explain and consider the impact of solutions to current and future real world problems	3
4	Demonstrate the interdependence between scientific fields	1 3

GENERIC SKILLS:	

All - Assessment Task 3: Scientific Report

GOAL:	In this task you will consider the findings from one of the lab sessions held in weeks 1, 3, 5, 7, 9 or 11 and write a scientific report based on the results obtained. This will allow you to complete the process of a scientific inquiry and to demonstrate foundational knowledge in a core science discipline (either biology, chemistry, math, biotechnology, ecology, food or biosecurity) through written communication and interpretation of scientific results.
PRODUCT:	Report
AUTHORSHIP STATEMENT:	
FORMAT:	Submit in Week 12. The format for this paper will be a general 'IMRaD' report template reflecting the format usually incorporated in scientific papers. It will be written individually in your own words. Additional instructions and guidance will be provided via Canvas and during class. Title - Brief and specific. Introduction - The purpose of the introduction is to provide a brief rationale of why the research was conducted, some background and a statement of purpose for the paper. You should also detail the extent of current knowledge and include references from the scientific literature. The introduction should also state what your research question / hypothesis is and explain why the project is of interest. Materials and Methods - A logical, concise sequence of the materials and methods used that a fellow scientist could follow to carry out the exact procedure as the one used. Results - The results section shows all the relevant findings from the lab session examined. You should present a summary of the data generated (summaries belong in results; the raw data (data sheets) should be included in the appendix); these should be achieved by the presentation of tables and/or graphs (full standalone titles), with written text before the figure / table that refers the reader to particular results that provide an indication of trends, consistencies, comparisons, anomalies etc. While you may state basic trends, you must not interpret or explain the result in any way. This is what the discussion is for! Discussion - Is the most important section of your report, where the results are discussed in light of your original purpose as stated in the introduction using appropriate references to support your interpretations. You must interpret the outcomes and explain the processes that led to the results obtained. What factors explain the variability in the results? Did the study achieve the objectives stated? Did the study concur with others or not? What were the limitations of the study and how could they be improved? Summary - conclusions - what is the relevance of this research for both the scientific community and wider society? Referencing - In text and reference list as appropriate to specific discipline
CRITERIA:	
GENERIC SKILLS:	

No.		Learning Outcome assessed
1	Demonstrate foundational knowledge in science	1 2 4
2	Use correct terminology and specific content of your chosen discipline	1
3	Use scientific writing style to convey knowledge, explain processes, interpret results and provide ideas for improving future studies	4
4	Explain the relevance of the research to the scientific community	3
5	Use the appropriate scientific references.	2 4

7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Student workload is calculated at 12.5 learning hours per one unit.

8. What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Canvas site– Please log in as soon as possible.

8.1. Prescribed text(s) or course reader

> There are no required/recommended resources for this course.

8.2. Specific requirements

Nil

9. How are risks managed in this course?

Risk assessments have been performed for all laboratory classes and a moderate level of health and safety risk exists. Moderate risks are those associated with laboratory work such as working with chemicals and hazardous substances. You will be required to undertake laboratory induction training and it is also your responsibility to review course material, search online, discuss with lecturers and peers and understand the health and safety risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the online induction training for students, and following the instructions of the University staff

10. What administrative information is relevant to this course?

10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Canvas, are electronically checked through Turnitin. This software allows for text comparisons to be made between your submitted assessment item and all other work to which Turnitin has access.

10.2. Assessment: Additional Requirements

Eligibility for Supplementary Assessment

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:
(a) The final mark is in the percentage range 47% to 49.4%; and
(b) The course is graded using the Standard Grading scale

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10.3. Assessment: Submission penalties

Late submissions may be penalised up to and including the following maximum percentage of the assessment task's identified value, with weekdays and weekends included in the calculation of days late:
(a) One day: deduct 5%;
(b) Two days: deduct 10%;
(c) Three days: deduct 20%;
(d) Four days: deduct 40%;
(e) Five days: deduct 60%;
(f) Six days: deduct 80%;
(g) Seven days: A result of zero is awarded for the assessment task.

The following penalties will apply for a late submission for an online examination:
Less than 15 minutes: No penalty
From 15 minutes to 30 minutes: 20% penalty
More than 30 minutes: 100% penalty

10.4. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Central Examinations
- Deferred Examinations
- Student Conduct
- Students with a Disability

For more information, visit https://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching

10.5. Student Charter

UniSC is committed to excellence in teaching, research and engagement in an environment that is inclusive, inspiring, safe and respectful. The Student Charter sets out what students can expect from the University, and what in turn is expected of students, to achieve these outcomes.

10.6. General Enquiries

For course-specific questions, contact your teaching staff or Course Coordinator.

For other enquiries or to access support, please contact Student Central:

- UniSC Student Central
- UniSC Adelaide Student Central