

ENS371 Sustainable Aquaculture

School: School of Science, Technology and Engineering

2025 | Semester 1

UniSC Sunshine Coast
UniSC Moreton Bay

**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 usc.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

Aquaculture is a global, interconnected and rapidly expanding industry transforming regional economies, removing pressure on fisheries and solving environmental issues. In this course, you will apply theoretical and practical knowledge of aquaculture to interpret trends and future scenarios relating to the economic, environmental and social sustainability of the industry in Australia and overseas. Developing and pitching a research proposal for your discipline that investigates a sustainability problem or opportunity builds useful skills for your future career.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – Asynchronous Learning Material	1hr	Week 1	13 times
Laboratory 1 – On campus Laboratory (computer, 2 wet labs)	3hrs	Week 2	3 times
Tutorial/Workshop 1 – On Campus Tutorial (8 from Week 1 to Week 11)	2hrs	Week 1	8 times
Tutorial/Workshop 2 – On Campus Workshop	3hrs	Week 13	Once Only

1.3. Course Topics

Global trends in aquaculture; Key aquaculture species in Australia and Queensland; Production constraints and opportunities; Water Quality; Environmental and economic impacts; Integrated aquaculture and restoration; Seafood marketing and certification; Social and livelihood impacts; Entrepreneurship and commercialisation; Crowd funding and community engagement; Pitching to fund research for a sustainable future

2. What level is this course?

300 Level (Graduate)

Demonstrating coherence and breadth or depth of knowledge and skills. Independent application of knowledge and skills in unfamiliar contexts. Meeting professional requirements and AQF descriptors for the degree. May require pre-requisites where discipline specific introductory or developing knowledge or skills is necessary. Normally undertaken in the third or fourth 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	GRADUATE QUALITIES MAPPING	PROFESSIONAL STANDARD MAPPING *
On successful completion of this course, you should be able to...	Completing these tasks successfully will contribute to you becoming...	Education for Sustainable Development Goals
1 Demonstrate and apply theoretical and practical knowledge to interpret local through to global sustainability trends in aquaculture	Knowledgeable Ethical Sustainability-focussed	14, 14.1.2, 14.1.5, 14.2.4, 14.2.5, 14.3.1, 14.3.3
2 Develop a research pitch for an aquaculture opportunity by: • reviewing literature and scanning current trends • justifying your pitch in terms of potential benefit	Creative and critical thinker Engaged	8.1.5, 9.1.5, 9.2.1, 9.2.3, 9.3.3, 9.3.4, 14.2.3
3 Effectively communicate in writing (pitch outline, research proposal, laboratory reports) and orally (research pitch)	Knowledgeable Empowered	8, 9, 12, 14, 14.1.2, 14.1.5, 14.2.1, 14.2.3, 14.3.1

* Competencies by Professional Body

CODE	COMPETENCY
EDUCATION FOR SUSTAINABLE DEVELOPMENT GOALS	
8.1.5	The learner understands how innovation, entrepreneurship and new job creation can contribute to decent work and a sustainability-driven economy and to the decoupling of economic growth from the impacts of natural hazards and environmental degradation.
8	Decent Work and Economic Growth: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
9.1.5	The learner is aware of new opportunities and markets for sustainability innovation, resilient infrastructure and industrial development.
9.2.1	The learner is able to argue for sustainable, resilient and inclusive infrastructure in their local area.
9.2.3	The learner is able to find collaborators to develop sustainable and contextual industries that respond to our shifting challenges and also to reach new markets.
9.3.3	The learner is able to innovate and develop sustainable enterprises to respond to their countries' industrial needs.
9.3.4	The learner is able to access financial services such as loans or microfinance to support their own enterprises.
9	Industry, Innovation and Infrastructure: Build infrastructure, promote inclusive and sustainable industrialization and foster innovation
12	Responsible Consumption and Production: Ensure sustainable consumption and production patterns
14	Life below Water: Conserve and sustainably use the oceans, seas and marine resources for sustainable development
14.1.2	The learner understands the connection of many people to the sea and the life it holds, including the sea's role as a provider of food, jobs and exciting opportunities.
14.1.5	The learner knows about opportunities for the sustainable use of living marine resources.
14.2.4	The learner is able to reflect on their own dietary needs and question whether their dietary habits make sustainable use of limited resources of seafood.
14.2.5	The learner is able to empathize with people whose livelihoods are affected by changing fishing practices.
14.3.1	The learner is able to research their country's dependence on the sea.

14.3.3	The learner is able to identify, access and buy sustainably harvested marine life, e.g. ecolabel certified products.
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14.2.3	The learner is able to influence groups that engage in unsustainable production and consumption of ocean products.
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14.2.1	The learner is able to argue for sustainable fishing practices.
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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

ESS371

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

This course applies skills and knowledge you have acquired during your first and second years to the multidisciplinary context of aquaculture, covering production, business, social and environmental aspects. While it does not assume prior knowledge of aquaculture, or seafood more generally, the course contains graduate level assessment and is normally taken in the third year of study. You will be expected to have the ability to work independently, communicate effectively, work collaboratively in laboratories and tutorials, generate and interpret data, and manage your time effectively

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

Verbal feedback to individuals and class will be provided about academic progress throughout the course. Class feedback will be provided on laboratory reports, including those early in the semester. Written feedback to individuals will be provided on the pitch outline (Assessment 1a) which should then be incorporated into the research proposal (Assessment 1b) and oral pitch (Assessment 2).

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	1a	Written Piece	Individual	5%	Two pages (about 500-750 words excluding references)	Week 4	Online Submission
All	1b	Written Piece	Individual	25%	2500 words (excluding references)	Week 12	Online Assignment Submission with plagiarism check
All	2	Oral	Individual	25%	10 minutes [3 minutes oral presentation approx. 7 minutes of Q&A]	Week 13	In Class
All	3	Report	Individual	45%	3 pages per laboratory report; 2 pages per discussion report	Throughout teaching period (refer to Format)	Online Submission

All - Assessment Task 1a: Research pitch proposal

GOAL:	This task will develop your creativity and communication of sustainable aquaculture	
PRODUCT:	Written Piece	
FORMAT:	<p>Following the steps in Canvas, you will create a written proposal for your pitch in two stages. Each stage will be assessed.</p> <p>For your outline (stage 1) you will generate a two-page written piece covering the:</p> <ul style="list-style-type: none"> • Brief background to your topic of interest • Statement of current problem or opportunity • Research question with the overarching approach you will use • Anticipated outputs and potential impact of the research • Budget and timeframe with key items that you would spend your budget on (up to \$50,000) 	
CRITERIA:	<p>No.</p> <p>1 Quality of the written text and structure of the report. Depth and logical development of the idea and its sustainability context. Incorporation and quality of data and references. Incorporation and quality of figures and tables.</p>	<p>Learning Outcome assessed</p> <p>1 2 3</p>
GENERIC SKILLS:		

All - Assessment Task 1b: Research pitch proposal

GOAL:	This task will develop your creativity and communication of sustainable aquaculture							
PRODUCT:	Written Piece							
FORMAT:	<p>Following the steps in Canvas, you will create a written proposal for your pitch in two stages. Each stage will be assessed. For your full proposal, you will use the feedback from the outline to provide a written piece of up to 2500 words. This written piece serves as a foundation for your oral presentation (Assessment 2). The full proposal will cover the same headings as the outline but expand on the following items:</p> <ul style="list-style-type: none"> • literature review in the background information and data on the size of the opportunity (economic, social or environmental) • identify competitors or alternatives for the topic • expand on the methods of research that you are proposing including a flow diagram • identify a “best case scenario” for the impact of your work • justify your budget items and timeline for activities in the table format provided 							
CRITERIA:	<table border="1"> <thead> <tr> <th>No.</th> <th></th> <th>Learning Outcome assessed</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>see task 1a</td> <td>1 2 3</td> </tr> </tbody> </table>	No.		Learning Outcome assessed	1	see task 1a	1 2 3	
No.		Learning Outcome assessed						
1	see task 1a	1 2 3						
GENERIC SKILLS:								

All - Assessment Task 2: Oral Presentation of research pitch proposal

GOAL:	To “pitch” your research proposal to peers													
PRODUCT:	Oral													
FORMAT:	<p>Submit: Last two weeks of semester.</p> <p>Your oral presentation is to be 10 minutes duration: 3 minutes of speaking about your research grant proposal and approximately 7 minutes for questions from the audience. Follow the format of the sections of the written piece when preparing a sequence of PowerPoint slides (the “pitch deck”).</p>													
CRITERIA:	<table border="1"> <thead> <tr> <th>No.</th> <th></th> <th>Learning Outcome assessed</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Demonstrate knowledge of your topic by reviewing the literature and identifying a significant opportunity in sustainable aquaculture</td> <td>1</td> </tr> <tr> <td>2</td> <td>Design a research project to investigate an problem (research question, methods, budget & timeline, potential impact)</td> <td>2</td> </tr> <tr> <td>3</td> <td>Communicate your research proposal in the form of an oral PowerPoint presentation (structure & content: relevance, use of terminology; delivery: clarity of slides, audibility & body language, timing, response to audience questions)</td> <td>3</td> </tr> </tbody> </table>	No.		Learning Outcome assessed	1	Demonstrate knowledge of your topic by reviewing the literature and identifying a significant opportunity in sustainable aquaculture	1	2	Design a research project to investigate an problem (research question, methods, budget & timeline, potential impact)	2	3	Communicate your research proposal in the form of an oral PowerPoint presentation (structure & content: relevance, use of terminology; delivery: clarity of slides, audibility & body language, timing, response to audience questions)	3	
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GENERIC SKILLS:														

All - Assessment Task 3: Short Reports

GOAL:	To demonstrate and apply theoretical and practical knowledge of aquaculture to interpret laboratory activities and sustainability discussion	
PRODUCT:	Report	
FORMAT:	Submit: After each laboratory and after each discussion topic (6 in total). Each report is to follow the template of question and answers provided. Each laboratory report is approximately three pages and will be 3 in total for wet laboratories and computer laboratories (10% each). Include results or graphs where appropriate. Each discussion report is approximately two pages and will be 3 in total (5% each).	
CRITERIA:	No.	Learning Outcome assessed
	1	Demonstrate and apply theoretical and practical knowledge to interpret laboratory activities 1
	2	Communicate in writing in the form of laboratory reports (structure, English expression, presentation of results/diagrams/graphs etc) 3
GENERIC SKILLS:		

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

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. SafeUniSC

UniSC is committed to a culture of respect and providing a safe and supportive environment for all members of our community. For immediate assistance on campus contact SafeUniSC by phone: [07 5430 1168](tel:0754301168) or using the [SafeZone](#) app. For general enquires contact the SafeUniSC team by phone [07 5456 3864](tel:0754563864) or email safe@usc.edu.au.

The SafeUniSC Specialist Service is a Student Wellbeing service that provides free and confidential support to students who may have experienced or observed behaviour that could cause fear, offence or trauma. To contact the service call [07 5430 1226](tel:0754301226) or email studentwellbeing@usc.edu.au.

10.5. Study help

For help with course-specific advice, for example what information to include in your assessment, you should first contact your tutor, then your course coordinator, if needed.

If you require additional assistance, the Learning Advisers are trained professionals who are ready to help you develop a wide range of academic skills. Visit the [Learning Advisers](#) web page for more information, or contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au.

10.6. Wellbeing Services

Student Wellbeing provide free and confidential counselling on a wide range of personal, academic, social and psychological matters, to foster positive mental health and wellbeing for your academic success.

To book a confidential appointment go to [Student Hub](#), email studentwellbeing@usc.edu.au or call 07 5430 1226.

10.7. AccessAbility Services

Ability Advisers ensure equal access to all aspects of university life. If your studies are affected by a disability, learning disorder mental health issue, injury or illness, or you are a primary carer for someone with a disability or who is considered frail and aged, [AccessAbility Services](#) can provide access to appropriate reasonable adjustments and practical advice about the support and facilities available to you throughout the University.

To book a confidential appointment go to [Student Hub](#), email AccessAbility@usc.edu.au or call 07 5430 2890.

10.8. 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>

10.9. 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.

10.10. General Enquiries

In person:

- **UniSC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **UniSC Moreton Bay** - Service Centre, Ground Floor, Foundation Building, Gympie Road, Petrie
- **UniSC SouthBank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane
- **UniSC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **UniSC Fraser Coast** - Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay
- **UniSC Caboolture** - Student Central, Level 1 Building J, Cnr Manley and Tallon Street, Caboolture

Tel: +61 7 5430 2890

Email: studentcentral@usc.edu.au