COURSE OUTLINE

ENS325 Population Ecology and Genetics

School: School of Science, Technology and Engineering

2026 | Trimester 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 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

Species live in populations. In order to understand how species survive in a changing world we need to understand their populations. The course gives a foundation in population ecology and genetics that is essential for conservation, restoration and invasive species management. You will develop field skills used to quantify populations and how they change, and learn key aspects of population genetics relevant to molecular ecology. You'll gain an understanding of population dynamics and develop skills in the analysis and interpretation of data in the study of population ecology and genetics and genomics.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – pre-recorded videos of learning content and instructions will be available online via canvas	2hrs	Week 1	12 times
Laboratory 1 – Self paced weekly tutorials to reinforce concepts and to learn analysis methods and data interpretation undertaken in computer laboratory	2hrs	Week 1	12 times

1.3. Course Topics

Population ecology; Population genetics; measuring and defining populations: population growth; regulation of population growth; genes in populations; Hardy-Weinberg equilibrium; genetic diversity; inbreeding; selection

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 On successful completion of this course, you should be able to...		GRADUATE QUALITIES Completing these tasks successfully will contribute to you becoming...
1	Summarise, analyse and interpret population ecology and genetics data	Creative and critical thinker Empowered
2	Calculate estimates of population growth	Knowledgeable Empowered
3	Understand and apply the key concepts in population ecology and population genetics	Knowledgeable Sustainability-focussed
4	Apply population ecology and genetics concepts to conservation and restoration issues	Ethical Sustainability-focussed

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

ENS221 or ANM203 or SCI212

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

Not applicable

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

Will have undertaken some scientific writing and data analysis at second year level

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

Students will be provided early feedback during class attendance at the computer laboratory sessions the completion of the allotted tasks and worksheet is then submitted each week one week after completion to be marked these are returned the following week. The marks combined make up the assessment task 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	1	Quiz/zes	Individual	20%	60 minutes	Throughout teaching period (refer to Format)	Online Test (Quiz)
All	2	Artefact - Technical and Scientific, and Written Piece	Individual	30%	100 x 10	Throughout teaching period (refer to Format)	In Class
All	3	Examination - Centrally Scheduled	Individual	50%	2 hr	Exam Period	Online Submission

All - Assessment Task 1: Weekly Quizzes

GOAL:	This task assesses comprehension of population ecology and genetics or genomics concepts presented in the weekly lectures.
PRODUCT:	Quiz/zes
AUTHORSHIP STATEMENT:	
FORMAT:	An online quiz will be administered each week via Canvas. The quiz will consist of multiple-choice questions. You must complete the quiz within one hour, and only one attempt is permitted. Submission: Week 1 to 12.
CRITERIA:	**No.** — **Learning Outcome assessed** 1 review of relevant literature on a specified topic relevant to population ecology and or population genetics/genomics ;Writing within Scientific literature review format and presentation and synthesis of ideas — 1 3
GENERIC SKILLS:	Communication, Problem solving, Organisation, Applying technologies, Information literacy

All - Assessment Task 2: Tutorial questions

GOAL:	The tutorial question series allows you to review and apply practicalaspects ofpopulation ecology and genetic and reinforce materials covered within the course in an applied contexts
PRODUCT:	Artefact - Technical and Scientific, and Written Piece
AUTHORSHIP STATEMENT:	
FORMAT:	Students to complete tutorial data analysis exercises and answer tutorial questions. To be submitted one week after tutorial completion. Each tutorial submission is of equal weighting and combined will result in 30% of the total marks. The specific tutorials to be submitted will be identified on Canvas and tutorial notes will be available on Canvas Submit: week 1 to week 12 as specified
CRITERIA:	**No.** — **Learning Outcome assessed** 1 Ability to perform data manipulations and demonstration of ability to interpret data correctly and answer specific questions — 1 2 3 4 2 Demonstration of understanding of key concepts and theories pertinent to Population Ecology and Genetics and to apply them to specific scenarios — 1 2 3 4
GENERIC SKILLS:	Communication, Collaboration, Problem solving, Organisation, Applying technologies, Information literacy

All - Assessment Task 3: Exam

GOAL:	Enable students to demonstrate understanding of theoretical concepts in population ecology and genetics, undertake analysis, interpretation and synthesis of population ecology and genetics data and apply this to specific scenarios.
PRODUCT:	Examination - Centrally Scheduled
AUTHORSHIP STATEMENT:	
FORMAT:	Each student will be examined based on material covered in lectures and tutorials for the course and the exam will be held in the normal examination period. The exam will contain short answer questions, data analysis and interpretation and an essay question.
CRITERIA:	**No.** / **Learning Outcome assessed** 1 Demonstration of understanding of material covered in lectures and tutorials and ability to apply population ecology and genetics concepts to conservation and restoration scenarios — 1 2 3 4
GENERIC SKILLS:	Communication, Problem solving, Organisation, Applying technologies, Information literacy

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

Not applicable

9. How are risks managed in this course?

Health and safety risks for this course have been assessed as low. It is 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

Eligibility for Supplementary Assessment Your eligibility for supplementary assessment in a course is dependent of the following conditions applying: The final mark is in the percentage range 47% to 49.4% The course is graded using the Standard Grading scale You have not failed an assessment task in the course due to academic misconduct

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