COURSE OUTLINE

ENS325 Population Ecology and Genetics

School: School of Science, Technology and Engineering

2022 | 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

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 media site	2hrs	Week 1	13 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	13 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

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	Literature Review (or component)	Individual	30%	2000 words	Week 9	Online Submission
All	2	Artefact - Technical and Scientific, and Written Piece	Individual	20%	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: Literature review

GOAL:	This task is designed to allow you to demonstrate your knowledge of population ecology and or genetics/genomics and develop scientific writing, interpretation, analysis and presentation skills
PRODUCT:	Literature Review (or component)
FORMAT:	Each student is required to write a literature review presented in scientific format. A set of potential topics will be supplied and students will have choice in which they select to review. Instructions and supporting materials will be provided
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

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
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 20% 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

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
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

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:

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 submission of assessment tasks may be penalised at the following maximum rate:
- 5% (of the assessment task's identified value) per day for the first two days from the date identified as the due date for the assessment task.
- 10% (of the assessment task's identified value) for the third day - 20% (of the assessment task's identified value) for the fourth day and subsequent days up to and including seven days from the date identified as the due date for the assessment task.
- A result of zero is awarded for an assessment task submitted after seven days from the date identified as the due date for the assessment task. Weekdays and weekends are included in the calculation of days late. To request an extension you must contact your course coordinator to negotiate an outcome.

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 or using the SafeZone app. For general enquires contact the SafeUniSC team by phone 07 5456 3864 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 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