Course Outline (Higher Education)

School: School of Science, Psychology and Sport

Course Title: POPULATION AND COMMUNITY ECOLOGY

Course ID: SCENV2200

Credit Points: 15.00

Prerequisite(s): (SCENV1002 or SCENV1502)

Co-requisite(s): Nil

Exclusion(s): (ENVGC2726)

ASCED: 050901

Description of the Course:
Understanding the structure and dynamics of populations, and the structure and diversity of communities is fundamental in environmental and conservation science. Population and Community Ecology develops students' understanding of the factors that shape species populations and communities. Students examine how populations grow and change through time, and how species and populations, in turn, interact to determine community structure and dynamics. Practical exercises are used to examine the ecology of populations and communities, putting theoretical learning into practice.

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the course but gained a final mark of 45 per cent or above and submitted all major assessment tasks.

Program Level:

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Introductory						
Intermediate			✔			
Advanced						

Learning Outcomes:

Students undertaking this course are expected to be able to demonstrate the following knowledge and skills.

Knowledge:

K1. Describe the factors that affect population and community structure and dynamics, interrelationships between taxa, and the distribution and abundance of species.

K2. Describe the ecological relationships that occur within a community that affect its composition, spatial and temporal diversity and resilience.

Skills:

S1. Explain the main ecological theories that underpin populations and communities.

S2. Examine, critically evaluate and summarise published ecological material and concepts.

S3. Undertake practical exercises to collect population and community data on plants, animals and other organisms and analyse the data in the context of population and community ecology.

Application of knowledge and skills:

A1. Conduct practical studies to investigate the structure and ecology of populations and communities.

A2. Communicate the outcomes of practical exercises to a scientific audience.

A3. Practice appropriate techniques and approaches to measure populations and communities.

Course Content:

This course provides a detailed exploration of the ecology of populations, their demography, the factors that shape their growth, how this varies in space and time, and the role of genetics and molecular ecology. The interaction between populations, that is the ecology of communities, and its influence on the coexistence of species and to how communities are structured is also explored.

Topics may include:

- Population structure.
- Population growth and dynamics.
- Counting and estimating population size.
- Community structure and diversity.
- Species interactions, such as competition, predation and mutualism.
- Community dynamics: disturbance and succession.

Values:

V1. Judge and value the contributions to ecological theory by a wide range of scientists.

V2. Appreciate the dynamic and complex nature of ecosystems, populations and communities.

V3. Value the application and usefulness of ecological theory to environmental management strategies.

V4. Recognise the need for ethical considerations when conducting scientific investigations.

Graduate Attributes

The Federation University FedUni graduate attributes (GA) are entrenched in the Higher Education Graduate Attributes Policy (LT1228). FedUni graduates develop these graduate attributes through their engagement in explicit learning and teaching and assessment tasks that are embedded in all FedUni programs. Graduate attribute attainment typically follows an incremental development process mapped through program progression. **One or more graduate attributes must be evident in the specified learning outcomes and assessment for each FedUni course, and all attributes must be directly assessed in each**

program

Graduate attribute and descriptor		Development and acquisition of GAs in the course	
		Learning Outcomes (KSA)	**Assessment task (AT#)**
GA 1 Thinkers	Our graduates are curious, reflective and critical. Able to analyse the world in a way that generates valued insights, they are change makers seeking and creating new solutions.	K1, K2, A3	AT1, AT2, AT4
GA 2 Innovators	Our graduates have ideas and are able to realise their dreams. They think and act creatively to achieve and inspire positive change.	S1, A1, A3	AT2, AT3
GA 3 Citizens	Our graduates engage in socially and culturally appropriate ways to advance individual, community and global well-being. They are socially and environmentally aware, acting ethically, equitably and compassionately.	S1, S2, S3	AT3
GA 4 Communicators	Our graduates create, exchange, impart and convey information, ideas, and concepts effectively. They are respectful, inclusive and empathetic towards their audience, and express thoughts, feelings and information in ways that help others to understand.	A2	AT3
GA 5 Leaders	Our graduates display and promote positive behaviours, and aspire to make a difference. They act with integrity, are receptive to alternatives and foster sustainable and resilient practices.	N/A	N/A

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1, S1	Population ecology quiz(zes).	Quiz	10-20%
K1, S1, S2, S3, A1, A2, A3	Demonstrate knowledge of molecular, population and community ecology.	Practical exercises	20-40%
K1, K2, S1, S2, S3, A1, A2, A3	Community ecology field-based investigation.	Report	20-40%
K1, K2, S1, S2, A3	Demonstration, application and interpretation of knowledge and skills.	Test	30-40%

Adopted Reference Style:

Australian Harvard

Refer to the library website for more information

Fed Cite - referencing tool