

## Life History Strategies and Trade-offs (C004335)

Due to Covid 19, the education and assessment methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

**Course size** *(nominal values; actual values may depend on programme)*  
**Credits 3.0**                      **Study time 75 h**                      **Contact hrs**                      39.0h

### Course offerings in academic year 2021-2022

A (semester 1)                      English                      Gent

### Lecturers in academic year 2021-2022

Minto, Cólín	GALWAY02	lecturer-in-charge
Mirimin, Luca	GALWAY02	co-lecturer
O'Connor, Ian	GALWAY02	co-lecturer
O'Dwyer, Katie	GALWAY02	co-lecturer

### Offered in the following programmes in 2021-2022

	<b>crdts</b>	<b>offering</b>
<a href="#">International Master of Science in Marine Biological Resources</a>	3	A

### Teaching languages

English

### Keywords

Seabirds, marine mammals, mark recapture, distance, survey techniques

### Position of the course

Organisms' life history strategies reflect the trade-off of finite resources to competing functions such as maintenance, growth and reproduction. It follows therefore, that allocation of resources to a reproductive event (for example) will come at a cost to growth, maintenance and possible future reproductive events. This module will explore relationships between: age and size, survival and reproductive performance. It will investigate the interaction between phenotypic variation resulting in selection coupled with the expression of genetic variation that facilitates a response to selection.

This module introduces the study of life history strategies reflecting pressures concerning options in terms of:

- What size or age to commence reproduction.
- The frequency and timing of reproductive events.
- Should an organism reproduce once, or many times in its life?
- What investment in terms of time and energy should it devote to reproduction versus growth and maintenance?
- How many offspring are produced?
- All of these and more have evolved into an organism's life history strategy with consequences for their survival. This module will examine the evolution of life history strategies and implications for species' ability adapt to pressures.

Syllabus to include:

- Introductory demography
- Introductory quantitative genetics
- Evolution and trade-offs of life history traits:
  - Age and size at maturity
  - Number and size of offspring
  - Reproductive lifespan and ageing
  - Case studies

### Contents

## **Initial competences**

## **Final competences**

- 1 Discuss the evolution of life history strategies.
- 2 Differentiate models of population growth.
- 3 Describe the influence of genetics on demography.
- 4 Interpret physiological and evolutionary tradeoffs.

## **Conditions for credit contract**

Access to this course unit via a credit contract is determined after successful competences assessment

## **Conditions for exam contract**

This course unit cannot be taken via an exam contract

## **Teaching methods**

Seminar, Lecture, Seminar: practical pc room classes

## **Extra information on the teaching methods**

The above concepts will be covered in the theoretical component of the course by means of lectures and interactive classes. The practical part of this course will include a series of in-class practical and computer work and interactions with researchers from the Marine and Freshwater Research Centre (MFRC) and industry partners.

## **Learning materials and price**

none

## **References**

Journals and other module material will be placed on moodle by the module co-ordinator.

## **Course content-related study coaching**

Students experiencing difficulties should engage with course staff, or academic support units within GMIT

## **Assessment moments**

continuous assessment

## **Examination methods in case of periodic assessment during the first examination period**

## **Examination methods in case of periodic assessment during the second examination period**

## **Examination methods in case of permanent assessment**

Assignment

## **Possibilities of retake in case of permanent assessment**

examination during the second examination period is possible in modified form

## **Calculation of the examination mark**