

Zoology Discipline

Zoology was established as a Discipline with the founding of the Department of Zoology, along with the Chair of Zoology and Comparative Anatomy in 1871, and has been in the Zoology building, one of the many listed buildings in TCD, since 1876.

Now equipped with new, modern laboratory facilities, the building still hosts part of the original Zoological Museum and collection, which is still used in undergraduate teaching.

The Zoology discipline comprises 9 full-time academic staff, excluding the Chair in Zoology (currently vacant) and 5 support staff, who, along with adjunct staff cover a wide range of zoological interests.

More details can be found at www.tcd.ie/Zoology.

There are also contributions of modules from **The School of Genetics and Microbiology**.

Functional Biology Quota -
10 students

Prerequisites

Prerequisites in TR071 are as follows:

Year 1

BY1101 - Molecular and Cellular biology

BY1102 - Evolution, Biodiversity and the Environment

MA1S11 - Mathematics and/or MA1M01
Mathematical Methods

Year 2

BY2201 - Cell Structure and Function

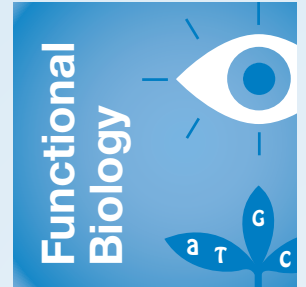
BY2202 - Vertebrate Form and Function

BY2203 - Metabolism

BY2208 - Genetics

Career Potential

The Functional Biology mentorship acts as a springboard for undergraduate students to go on to post-graduate degrees; e.g. Masters and PhDs in biological/physiological disciplines. Graduates of Functional Biology are ideally placed to contribute to the knowledge economy/society through careers with biotechnology companies and/or industry, having gained unique and valuable experience and training. Furthermore, Functional Biology provides an excellent background for students who want to pursue a career in teaching biology.



FUNCTIONAL BIOLOGY THE COMPARATIVE PHYSIOLOGY OF ORGANISMS

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Course Aims

The aim of this mentorship within TR071 is to provide a broad training in Functional Biology - **The Comparative Physiology of Organisms**. The course integrates both animal and plant physiology and explore the diversity of their functional characteristics in the context of their evolutionary histories. The course is run jointly by staff from **Botany** and **Zoology** Disciplines in the **School of Natural Sciences** with input from Genetics. It integrates, in particular, with the Molecular and Comparative Physiology interdisciplinary research theme in the School of Natural Sciences. The course builds on a long standing tradition of teaching **Comparative Physiology of Organisms** by both Zoology and Botany Disciplines.

Course Structure and Content

The course is built around themes including: perception, movement, energy, and structure (in the context of evolution); i.e. the emphasis is on the comparative physiological mechanisms of organisms.

The way the course is constructed is consistent with all other courses within the School of Natural Sciences.

What is Functional Biology?

- **Functional Biology** is an emerging field describing the comparative physiology of plants and animals; i.e., in elucidating basic comparative mechanisms of physiological function focusing on model organisms.
- **Functional Biology** describes the uncovering of important physiological phenomena that are conserved across species, thereby revealing key principles that could not be revealed by the study of individual model organisms alone.
- **Functional Biology** has a unifying significance for evolutionary biology in that the physiological processes plants and animals employ are best understood in the context of their evolutionary history.
- **Functional Biology** is at the core of biological as well as macroevolutionary explanations for the history of life.
- **Functional Biology** has important roles to play in elucidating the effects of gene mutations/ablations affecting protein function or environmental effects on gene expression.

School of Natural Sciences

The School of Natural Sciences is committed to innovative, research-led teaching and learning programmes. Research streams within the school relevant to teaching Functional Biology include: whole-organism physiology, predator-prey and host-parasite interactions, ocular development and neurobiology, and the molecular processes of development. Many of these areas have recently attracted SFI and other sources of funding.

Botany Discipline



Botany is one of the oldest established disciplines in TCD (1711). Over the past 300 years the discipline has been at the forefront of international research with particular strengths in ecophysiology, ecology and plant taxonomy. The discipline also maintains the School's molecular research laboratory which includes a DNA sequencer. All nine lecturers in Botany run active research labs that inform their teaching and offer exciting opportunities for rising undergraduates. In addition to the laboratories on campus, Botany maintains the TCD Herbarium and the TCD Botanic Gardens at the Trinity Hall site in Dartry. The discipline has an extensive network of contacts at national and international research facilities and field stations.

More details can be found at www.tcd.ie/Botany/

