

# Applied Plant Biology BSc

College of Science,  
Engineering and Food  
Science



University College Cork, Ireland  
Coláiste na hOllscoile Corcaigh

## Introduction

Applied Plant Biology (APB) is the study of plants in natural habitats and in agriculture. It explores the preservation of rare species and the supply of food, fuels or medicine to the world. It is also about understanding the molecular basis of growth and the function of plants in an ecosystem.

## Why Study

Because they do not move, plants have evolved sophisticated responses to environmental change. This flexibility is harnessed by addressing some of the most pressing problems facing mankind, including climate change, an accelerating rate of species-extinction and the need to feed a growing world-population. This has created a strong need for plant scientists with a thorough understanding of plant biology across organisational scales, from DNA to vegetation. The APB curriculum integrates the study of plants at the molecular, biochemical, whole-plant and ecosystem level. Courses are research-led and taught through different media including lectures, practical laboratory classes, tutorials, seminars and field visits.

## Work Placement

Practical field experience forms an important part of this degree programme. Many APB students obtain work experience with plant-based research groups and companies in Ireland and abroad during the summer vacations. A formal work-experience module is available in Year 4.

## Study Abroad

As part of the curriculum students can spend part or all of Year 3 abroad at a partner university (mainly in the EU and North America). Alternatively, there are regular opportunities to undertake the fourth year research project (10 weeks) abroad. Students may be eligible for ERASMUS funding for such exchanges.

## Careers

APB graduates have entered a wide range of careers reflecting the breadth of the programme. Some graduates work with plants as plant breeders, crop protection scientists or plant ecologists, while others work in areas such as the biotechnology, food, pharmaceutical, agricultural support, health and environmental protection industries, education or journalism.

## Further Study

Many of our graduates continue in higher education (in UCC or elsewhere) to obtain a higher research-based qualification, such as MSc (1-2 years) or PhD (3-4 years), which opens up even more career opportunities. In this School, we have a number of world-class plant science research teams who recruit the best graduates for postgraduate studies.

## CK404

### DEGREE OUTLET

### COURSE PAGE ONLINE

[www.ucc.ie/en/ck404/appliedplantbiology](http://www.ucc.ie/en/ck404/appliedplantbiology)

### CONTACT INFORMATION

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## WILLIAM ORGAN

BSc, 2011

*“Throughout the APB degree I learned skills such as tissue culture and genetic manipulation, as well as experimental design, data analysis and reporting. I am a researcher at NUIG where I convert plant biomass to biofuel. The degree is invaluable and has opened doors for me in academia and industry.”*

#uccmakeyourmark



## KEY FACTS

- A broad degree programme integrating molecular, biochemical, whole-plant and vegetation perspectives
- A degree programme that integrates laboratory and field science
- A small degree programme with direct access to lecturers
- A degree programme that is directly relevant for many of the big challenges of today's world

### Year 1 Modules

**BL1002** Cells, Biomolecules, Genetics & Evolution (5 credits); **BL1004** Physiology and Structure of Plants and Animals (5 credits); **BL1005** Habitats and Ecosystems (5 credits); **CM1003** Introductory Chemistry for Environmental Scientists (10 credits); **ER1006** Applied Earth Systems (5 credits); **EV1002** The Environment (5 credits); **GL1001** Introduction to Geology (5 credits); **GL1004** Geological Evolution of Ireland (5 credits); **GG1010** Introduction to Physical Geography (5 credits); **MA1001** Calculus for Science Part 1 (5 credits); **PY1009** Physics for the Environmental Sciences I (5 credits)

### Year 2 Modules

Plant and Animal Genetics; Introduction to Plant Biotechnology; Ecological Plant Physiology; Plant Identification; Introduction to Biostatistics; Vertebrate Diversity; Invertebrate Diversity; Fundamentals of Ecology; Practical Ecological Skills; Fundamentals of Microbiology; Principles of Microbiology; Fossils as Living Organisms

### Year 3 Modules

**CORE:** Plant Biology Literature Review; Plant Biology Field Course (residential); Conservation Biology; Plants and Hostile Environments; Evolution and Diversity; Bioactive Natural Products; Biostatistics

**ELECTIVES:** Adaptation to Extreme Environments; Animal Behaviour; Introduction to Ecotoxicology; Plant and Animal Genetics; Environmental Systems Microbiology; Micropalaeontology and Palynology; Animal Physiology

### Year 4 Modules

**CORE:** Plant Biology; Research Project; Frontiers in Biology; Research Skills in Biology; Crop Physiology and Climate Change; Food Production; Genetic Manipulation of Plants; The Environmentally Protective Management of Plant Pests and Pathogens; Biostatistics II

**ELECTIVES:** Advanced Ecotoxicology; Landscape Conservation and Management (Burren residential field course); Biological Work Placement; Biology and Management of Alien Species