

#### MODULE DESCRIPTOR

#### **Module Title**

Plant Biology and Biotechnology

Reference PL2106 Version 1

Created October 2022 SCQF Level SCQF 8

Approved June 2023 SCQF Points 15

Amended August 2021 ECTS Points 7.5

#### **Aims of Module**

To provide students with the ability to explain the fundamentals of plant biology, the application of biotechnology to plants and appreciate the importance of plants to society.

## **Learning Outcomes for Module**

On completion of this module, students are expected to be able to:

- 1 Explain plant evolution and describe the major plant groups.
- 2 Discuss the requirements and processes for the survival, growth and reproduction of plants.
- Discuss the application of biotechnology to plants and the importance of plants and plant products to society.
- 4 Demonstrate effective teamwork and communications skills.

#### **Indicative Module Content**

Introduction to the Plant Kingdom: evolution of plants, taxonomic classification, principal characteristics of lower and higher plants. Plant growth requirements: environmental factors, water, light, temperature, gravity, gases, soil minerals, macronutrients, micronutrients, salinity, pH, biotic factors, hormones, photosynthesis. Plant growth: cell division, transpiration. Sexual reproduction, pollination, fertilisation, germination, seeds and fruits. Vegetative growth, asexual reproduction. senescence, abscission. Plants and society: plant breeding, crop production, secondary metabolites, global warming; plant biotechnology.

## **Module Delivery**

This is a lecture based course supplemented with tutorial sessions and virtual lab exercises.

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Indicative Student Workload	Full Time	Part Time
Contact Hours	36	N/A
Non-Contact Hours	114	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	N/A
Actual Placement hours for professional, statutory or regulatory body		

## **ASSESSMENT PLAN**

If a major/minor model is used and box is ticked, % weightings below are indicative only.

#### **Component 1**

Type: Examination Weighting: 100% Outcomes Assessed: 1, 2, 3, 4

Description: Group oral presentation showing evidence of group work.

# **MODULE PERFORMANCE DESCRIPTOR**

## **Explanatory Text**

Component 1 (CW1) comprises 100% of the module grade. A minimum of a Grade D is required to pass the module. Non-submission of either component will result in an NS grade.

Module Grade	Minimum Requirements to achieve Module Grade:
Α	A
В	В
С	С
D	D
E	E
F	F
NS	Non-submission of work by published deadline or non-attendance for examination

## **Module Requirements**

Prerequisites for Module Successful completion of Stage 1 of the course or equivalent.

Corequisites for module None.

Precluded Modules None.

## **INDICATIVE BIBLIOGRAPHY**

- 1 EVERT, R.F. AND EICHORN, S.E. 2012. Raven Biology of Plants. 8th Edition. W.H. Freeman.
- 2 BIDLACK, J.E. AND JANSKY, S.H. 2020. Stern's Introductory Plant Biology. 15th Edition. McGraw Hill.
- 3 MAUSETH, J.D. 2008. Botany. 4th Edition. Jones and Bartlett.