# MODULE SPECIFICATION

| Part 1: Information | | | |
|---|---|---|---|
| Module Title | Life on Earth | | |
| Module Code | USSK5C-30-1 | Level | Level 4 |
| For implementation from | 2020-21 | | |
| UWE Credit Rating | 30 | ECTS Credit Rating | 15 |
| Faculty | Faculty of Health & Applied Sciences | Field | Applied Sciences |
| Department | HAS Dept of Applied Sciences | | |
| Module type: | Standard | | |
| Pre-requisites | None | | |
| Excluded Combinations | None | | |
| Co- requisites | None | | |
| Module Entry requirements | None | | |

## Part 2: Description

**Educational Aims:** This module examines the features and evolution of the major plant, animal and microorganism groups.

**Outline Syllabus:** Principles of organism taxonomy; classification and key features of plant, animal and microorganism groups.

Introduction to plant biology: Photosynthesis, mineral nutrition and regulation of plant growth. Factors affecting plant distribution on a global and local scale. Human dependence on plants as the primary source of food, fuel and other products.

Introduction to animal biology: comparative animal physiology; the invertebrates and the vertebrates; gas exchange; water and solute balance. Adaptations for living in aquatic and terrestrial environments.

Introduction to microbiology: cultivation and control of microorganisms; microbial interactions including pathogenicity; food and industrial microbiology.

Population and evolutionary genetics: Genetic variation within populations and effects on gene pools and gene frequencies. Applications of the Hardy-Weinberg equilibrium. Gene frequencies

and evolution. Forces of evolutionary change; how species arise and become extinct. Evidence for evolution, rates of evolution, Gradualism and punctuated equilibrium; "living fossils". The evolution of major taxonomic groups and the characteristics of important extant groups of plants and animals.

In addition, students are introduced to some of the key concepts in ecology, in the context of the organisms they are studying, including: population growth (microorganisms); essential nutrients and factors limiting growth (plants); symbiosis and mutualism (microorganisms).

**Teaching and Learning Methods:** All lectures, tutorials and most practicals will move online. Three practical classes will be delivered in shortened form on site.

**Part 3: Assessment**

Component A is made up of two online exams, to be completed within a 24 hour window, that take place at the end of each semester. Each paper is designed to test both the breadth of the students' subject knowledge and their understanding of key concepts. Having two examinations reduces the pressure on students to revise a very large body of information for an end-of-year examination and also facilitates timely feedback on exam performance.

The coursework component of the assessment (component B) is made up of two elements, the practical report and a short case study (500 words maximum). Students have to fully engage with the practical elements of the module to succeed in the practical report, and this ensures that students gain the subject-specific skills and generic (eg. group working, awareness of Health and Safety issues) needed for the scientific study of life on earth. The short case study helps students to build their research and information synthesis skills, and develops their ability to communicate complex scientific information is a clear and succinct way.

Opportunities for formative assessment are embedded in the module teaching and take a variety of forms, including: in class and on-line tests and quizzes, problem-solving workshops, and model answers for past exam questions.

| First Sit Components | **Final Assessment** | **Element weighting** | **Description** |
|---|---|---|---|
| Report - Component B | | 42 % | Practical report (2000 words) |
| Examination (Online) - Component A | | 20 % | Online examination 1 (24 hours) |
| Examination (Online) - Component A | ✓ | 20 % | Online examination 2 (24 hours) |
| Case Study - Component B | | 18 % | 500 word case study |
| Resit Components | **Final Assessment** | **Element weighting** | **Description** |
| Report - Component B | | 42 % | Practical Report based on provided data (2000 words) |
| Examination (Online) - Component A | ✓ | 40 % | Online examination (24 hours) |
| Case Study - Component B | | 18 % | 500 word case study |

## Part 4: Teaching and Learning Methods

**Learning Outcomes**

On successful completion of this module students will achieve the following learning outcomes:

| Module Learning Outcomes | Reference |
|---|---|
| Identify the key characteristics of major plant, animal and microorganism taxonomic groups and describe the responses of these groups to variations in selected environmental conditions | MO1 |
| Describe the roles and interactions of plants, animals and microbes in ecological systems, and their importance to human well-being | MO2 |
| Describe the development of evolutionary ideas and evidence for evolution | MO3 |
| Describe the modes of inheritance of characteristics and explain the mechanisms of evolutionary change | MO4 |
| Obtain, record and interpret data using appropriate techniques in the field and laboratory | MO5 |
| Undertake field and laboratory investigations of living systems in a responsible, safe and ethical manner | MO6 |

**Contact Hours**

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|---|---|
| **Independent Study Hours:** | |
| Independent study/self-guided study | 234 |
| **Total Independent Study Hours:** | 234 |
| **Scheduled Learning and Teaching Hours:** | |
| Face-to-face learning | 66 |
| **Total Scheduled Learning and Teaching Hours:** | 66 |
| **Hours to be allocated** | 300 |
| **Allocated Hours** | 300 |

**Reading List**

*The reading list for this module can be accessed via the following link:*

https://uwe.rl.talis.com/modules/ussk5c-30-1.html

## Part 5: Contributes Towards

This module contributes towards the following programmes of study: