Module Specification

The Microbial World

Version: 2023-24, v2.0, 31 May 2023

Contents

Part 1: Information

Module title: The Microbial World

Module code: USSKN7-15-2

Level: Level 5

For implementation from: 2023-24

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Health & Applied Sciences

Department: HAS Dept of Applied Sciences

Partner institutions: None

Delivery locations: Not in use for Modules

Field: Applied Sciences

Module type: Module

Pre-requisites: Life on Earth 2023-24

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Not applicable

Features: Not applicable

Educational aims: See learning outcomes.

Outline syllabus: The indicative content of this module will focus on the role of microorganisms in the environment

Roles of microorganisms in terrestrial and marine ecosystems: students will develop an understanding of the role and significance of microorganisms in marine and terrestrial ecosystems and their importance in biogeochemical cycles.

Microbial cell-to-cell communication: students will develop knowledge of microbial cell-cell communication, polymicrobial communities and the phenomenon of bacterial bioluminescence, including their roles in the environment and in human disease.

Eukaryotic mirrobiology: students will develop an understanding of the diversity and role of the fungi and protozoa in the environment, and the contribution these environmental organisms make to human activities.

Microbial biotechnology: students will develop an understanding of the utility of microorganisms in everyday life from historical uses including brewing and baking through to modern recombinant technologies including microbial energy.

The changing world: students will develop an understanding of the changing relationship between mankind and microbes in the environment as humans continue to exploit the planet. This will include emerging and re-emerging disease, damage to the biogeochemical cycles which microbes underpin and how microbial biotechnology can be exploited to mitigate these processes, for example bioremediation and microbial fuel cells.

Part 3: Teaching and learning methods

Teaching and learning methods: See assessment strategy.

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

MO1 Understand the role and diversity of microorganisms in the environment in a variety of ecological niches

MO2 Evaluate the significance of a microorganisms in environmental cycling

MO3 Understand the role of environmental change in influencing how microbes interact with humans and the environment

MO4 Analyse data derived from laboratory study of microorganisms

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 117 hours

Face-to-face learning = 33 hours

Total = 150

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://uwe.rl.talis.com/modules/usskn7-15-2.html

Part 4: Assessment

Assessment strategy: Assessment task A will consist of an online exam over a 24 hour period. This assessment will provide students with an opportunity to demonstrate their knowledge and understanding of environmental microbiology and their ability to identify, interpret and evaluate evidence from the published literature in a time-limited framework. This assessment will test a range of the learning outcomes and will provide a valuable learning experience through utilising skills which will be of benefit when progressing to final year modules.

Assessment task B comprises a research review which will require students to complete a 1000 word written account on a beneficial environmental aspect of microorganisms. This assessment will test a range of learning outcomes and will provide a valuable learning experience through applying knowledge of microbiology in the field of environmental science and supporting this through evidencing the published literature.

Assessment components:

Examination (Online) (First Sit)
Description: Online examination (24 hours)
Weighting: 50 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO4

Written Assignment (First Sit)
Description: 1000 word research review
Weighting: 50 %
Final assessment: No
Group work: No
Learning outcomes tested: MO2, MO3, MO4

Examination (Online) (Resit)
Description: Online examination (24 hours)
Weighting: 50 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO4

Written Assignment (Resit)
Description: 1000 word research review
Weighting: 50 %
Final assessment: No
Group work: No
Learning outcomes tested: MO2, MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Environmental Science [Frenchay] BSc (Hons) 2022-23

Wildlife Ecology and Conservation Science [Frenchay] MSci 2022-23

Environmental Science [Sep][SW][Frenchay][4yrs] BSc (Hons) 2022-23

Environmental Science [Sep][FT][Frenchay][3yrs] BSc (Hons) 2022-23

Environmental Science [Frenchay] MSci 2022-23

Wildlife Ecology and Conservation Science [Zoo] BSc (Hons) 2022-23

Wildlife Ecology and Conservation Science {Foundation} [Sep][SW][Zoo][5yrs] BSc (Hons) 2021-22

Environmental Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2021-22

Environmental Science {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2021-22

Environmental Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2021-22

Wildlife Ecology and Conservation Science {Foundation} [Sep][FT][Zoo][4yrs] BSc (Hons) 2021-22

Wildlife Ecology and Conservation Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2021-22

Wildlife Ecology and Conservation Science {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2021-22

Environmental Science {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2021-22