

Course Outline (Higher Education)

School:	School of Health and Life Sciences
Course Title:	ENVIRONMENTAL MICROBIOLOGY
Course ID:	BTHGC3732
Credit Points:	15.00
Prerequisite(s):	(MICGC2011)
Co-requisite(s):	Nil
Exclusion(s):	Nil
ASCED Code:	010911

Description of the Course :

This unit begins by examining the fundamental principles of microbial ecology and the basic methods used in this area. It then considers the role of micro-organisms in biogeochemical nutrient cycles. Some important natural habitats for micro-organisms such as air, fresh water and salt water are considered with the main discussion centred on soil. The roles of particular soil micro-organisms within their microenvironments are explained with special attention being given to micro-organisms involved in transformations of carbon and nitrogen. The role of micro-organisms in composting, the management of pollution and as agents of bioremediation is discussed.

Grade Scheme: Graded (HD, D, C, etc.)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the course but gained a final mark of 45 per cent or above and submitted all major assessment tasks..

Program Level:

AQF Level of Program						
	5	6	7	8	9	10
Level						
Introductory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermediate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Learning Outcomes:

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BTHGC3732 ENVIRONMENTAL MICROBIOLOGY

On completion of this unit students will be able to:

1. Discuss principles of microbial ecology, recognising the role of micro-organisms as a mixed flora;
2. Diagram the role of micro-organisms in biogeochemical nutrient cycles;
3. Discuss the role of different micro-organisms in air, water environments, and soils, predicting the effects of changes in environmental parameters;
4. Describe how micro-organisms can cause pollution and the use of micro-organisms as indicators of pollution;
5. Discuss the role of micro-organisms in sewage treatment and composting;
6. Explain how micro-organisms can be exploited in bioremediation;
7. Demonstrate the use of molecular and traditional methods for detection and identification of micro-organisms.

Course Content:

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
Final written examination (3 hours)	Final written examination (3 hours)	Final written examination (3 hours)	60%
Laboratory reports	Laboratory reports : 30% +Assignment (2000 words) 10%. The laboratory reports comprise one major lab report worth 10%, and 5 smaller reports worth a total of 20%	Laboratory reports	40%

Adopted Reference Style: