Course Outline (Higher Education)

School: School of Health and Life Sciences

Course Title: FOOD AND INDUSTRIAL MICROBIOLOGY

Course ID: BTHGC3711

Credit Points: 15.00

Prerequisite(s): (MICGC2011)

Co-requisite(s): Nil

Exclusion(s): Nil

ASCED Code: 010911

Description of the Course :

This unit discusses food as a habitat, the principles involved in microbiological spoilage of foods, micro-organisms of public health significance that cause food-borne illness, food safety and aspects of food preservation. Microbiological testing of foods is considered using current standard methods. The industrial microbiology section examines how micro-organisms are obtained, handled and maintained in industry and discusses the application of genetically modified micro-organisms. Fermentation modes and kinetic models are discussed using batch and continuous growth. Scale up and downstream processes of industrial fermentations and the role of micro-organisms in producing substances of industrial importance is discussed using antibiotics, hormones, membrane proteins and bioethanol as examples.

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						
Intermediate						
Advanced			✔			

Course Outline (Higher Education)

BTHGC3711 FOOD AND INDUSTRIAL MICROBIOLOGY

Learning Outcomes:

On completion of this unit students will be able to:

1. Discuss food as a habitat for micro-organisms;
2. Describe micro-organisms characteristic to the food industry and their roles in food production, food spoilage and food-borne illnesses;
3. Explain principles involved in microbiological spoilage of food, microbial control, and methods of preserving foods;
4. Recognise the importance of microbiological food criteria and HACCP systems for maintaining food safety in industry;
5. Discuss the use of microorganisms in industrial processes, and providing examples representing the breadth of these applications;
6. Describe the principles and applications of batch and continuous fermentation processes;
7. Describe the application of industrial control systems such as SCADA for microbial fermentations.

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%
One major and two minor laboratory reports	One major and two minor laboratory reports	One major and two minor laboratory reports	30%
One assignment (2000 words)	One assignment (2000 words)	One assignment (2000 words)	10%

Adopted Reference Style: