208-294 Food Microbiology and Safety

Credit Points:	12.50
Level:	2 (Undergraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 1, - Taught on campus.
Time Commitment:	Contact Hours: Thirty-six hours of lectures and 36 hours practical, and demonstrations. Total Time Commitment: Estimated total time commitment (including non-contact time): 216 hours.
Prerequisites:	650-141 Biology and 650-142 Genetics
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	Students are expected to be familiar with word processing, data management and graphical software packages and to be competent in electronic search techniques.This subject requires attendance at lectures and active participation in practicals and tutorials.
Coordinator:	Dr David Edward Tribe
Contact:	Undergraduate enquiries, the Melbourne School of Land and Environment msle-ugrad@unimelb.edu.au
Subject Overview:	Microbes (viruses, bacteria, fungi, parasites and other agents) can be associated with food in several ways: # as components of the fermentation processes that are associated with the development of flavours and textures of food and its preservation # as the normal microflora that is associated with the origins of the food and persist during storage, possibly contributing to food spoilage # as contaminants that enter food during processing or through subsequent mishandling, often posing public health risks. However, as foods must be safe and fit for human consumption, this subject aims to familiarise students with major food spoilage and pathogenic microorganisms. The content will cover: # the kinetics of bacterial growth and the factors that may alter this (water activity, low pH, temperature, preservatives), # the principles of modelling growth # the principles of hazard and risk assessment in microbiological safety # the role of microbes in food processing, including examples of specific fermentation processes and waste treatment. Practical exercises and case studies will be undertaken to provide an in-depth understanding of the regulatory framework of food safety locally and internationally.
Objectives:	On completion of the subject students should be able to: # describe concepts of normal flora and pathogenic microbes # understand how microbes interact and impact on their environments # understand the basics of identifying, classifying and enumerating microbes important in agri-food systems # use bright field light microscopy as a tool for identifying microbes # use aseptic techniques for the transfer and handling of microorganisms and instruments.

Assessment:	Practical reports (20%); reports from case studies (20%), one 1-hour examination (mid-semester) (20%) and one 2-hour examination (40%).
Prescribed Texts:	None
Recommended Texts:	None
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	On completion of this subject students should have developed the following generic skills: # enhanced skills in preparing reports based on practical experience # to analyse and integrate information from published and publicly available literature # work in a team to complete case study assigned tasks in a timely fashion.
Notes:	This subject is available for science credit to students enrolled in the BSc (new degree only).