208-216 Food Microbiology

Credit Points:	12.500
Level:	Undergraduate
Dates & Locations:	2008, This subject commences in the following study period/s: Semester 2, - Taught on campus.
Time Commitment:	Contact Hours: Thirty-six hours of lectures and 36 hours practical, demonstrations and computer-assisted learning (2nd semester, year 2) Total Time Commitment: Not available
Prerequisites:	526-201 Principles of Microbiology and Immunology.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry. It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability
Coordinator:	David Tribe
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; and as contaminants that enter food during processing or through subsequent mishandling, often posing public health risks. The aim of this subject is to familiarise students with: the microbes that are important in each one of these situations, including the major food pathogens and how to identify and characterise these through microbiological and genetic analysis: understanding the kinetics of bacterial growth and the factors that may alter this (altered water activity, low pH, temperature, preservatives) and the principles of modelling growth; 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 familiarise students with traditional and emerging microbiological techniques for detecting and identifying food microbes. Case studies will be performed in groups to develop investigative and group dynamic skills. On completion of this subject, students should be able to: # describe the role that microbes may play in food production, preservation, storage and safety; # explain the principles of hazard analysis and critical control point assessment as applied to microbiological safety of food; # apply models of bacterial growth to predict the impact of storage conditions and the presence of growth inhibitors; # understand the role of microbes in product development, preservation and trait development;

	# analyse the microbiology of foods using standard microbiological techniques and apply new technologies for this purpose; and # work within groups analysing and solving complex problems.
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:	Information Not Available
Breadth Options:	This subject is a level 2 or level 3 subject and is not available to new generation degree students as a breadth option in 2008. This subject or an equivalent will be available as breadth in the future. Breadth subjects are currently being developed and these existing subject details can be used as guide to the type of options that might be available. 2009 subjects to be offered as breadth will be finalised before re-enrolment for 2009 starts in early October.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	Information Not Available
Related Course(s):	Bachelor of Food Science