FOOD30008 Advanced Food Analysis

Credit Points:	12.5
Level:	3 (Undergraduate)
Dates & Locations:	2015, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 24 hours of lectures and 36 hours of practicals and demonstrations Total Time Commitment: 170 Hours
Prerequisites:	12.5 credit points of the following:

Subject	Study Period Commencement:	Credit Points:
FOOD20003 Food Chemistry, Biology and Nutrition	Semester 1	12.50
CHEM10006 Chemistry for Biomedicine	Semester 1	12.50
CHEM10007 Fundamentals of Chemistry	Semester 1	12.50

Corequisites:	None
Recommended Background Knowledge:	It is recommended that students have a basic knowledge in chemistry, biology and nutrition by completing the following subject.

Subject	Study Period Commencement:	Credit Points:
FOOD20003 Food Chemistry, Biology and Nutrition	Semester 1	12.50

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:	Assoc Prof Said Ajlouni
Contact:	**said@unimelb.edu.au (mailto:said@unimelb.edu.au)**
Subject Overview:	Advanced food analysis will teach students most rapid and standard conventional methods commonly used in food analysis. These analytical techniques will include: ＃ the selection of appropriate scientific methods for a specific food analysis, physical and chemical parameters; ＃ principles of instrumentation and/or methodology and applications of these principles to the technologies employed in analytical techniques; ＃ comparison of instrumental and/or rapid methods to conventional techniques of analysis; ＃ operation, calibration and standardisation procedures as applicable to particular techniques; ＃ troubleshooting techniques in conventional and rapid analyses; and

	# assessment and evaluation of data derived from researches and product development. Methods to be examined are titration, rheology, chromatography (HPLC, GLC, ion exchange separations, spectrophotometry, UV, visible, infrared); AA; mass spectrometry; ELISA, fluorescence spectrometry, and sensory.

Learning Outcomes:	On the completion of this subject students should be able to:
	  # describe the physical and chemical principles which underlie rapid and instrumental techniques for testing and analysing raw materials and finished products;
	  # evaluate innovative instrumental methods for specific purposes and materials against criteria of reliability and validity of results, and of cost and efficiency of monetary and labour resources; and
	  # select rapid or instrumental methods for appropriate types of analyses, in order to reduce using chemicals and to protect the environment.

Assessment:	One 1-hour mid-semester exam, worth 25%. A practical report (1000 words), worth 30%, and due approximately in week 10. One 2-hour final exam during the final examination period, worth 45%.
Prescribed Texts:	N/A

Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses:
	  # **Bachelor of Arts (https://handbook.unimelb.edu.au/view/2015/B-ARTS)**
	  # **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2015/B-ENVS)**
	  # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2015/B-MUS)**
	
	You should visit **learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)** and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.

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:
	  # Be able to argue formally about the best method of food analysis for a specific purpose.
	  # Evaluate standard methods of analysis to determine accuracy and precision of measurements.
	  # Analyse data and integrate it with critical thinking.
	  # Improve interpretation of data in a written format.
	  # Be prepared for participation in team work.
	  # Engage with national and international issues related to food analyses.

Related Majors/Minors/Specialisations:	Agri-food Biotechnology (specialisation of Biotechnology major) Food Science Science-credited subjects - new generation B-SCI and B-ENG. Selective subjects for B-BMED