

The Hong Kong Polytechnic University

Subject Description Form

Subject Code	FSN3416 (ABCT3416)
Subject Title	Food Analysis Laboratory
Credit Value	1
Level	3
Pre-requisite	FSN3402 / ABCT3402 Food Chemistry
Co-requisite	FSN3415 / ABCT3415 Food Analysis
Exclusion	Nil
Objectives	The subject aims to familiarize students with the principles and techniques of food analysis by using laboratory instruments. Another objective of this subject is to develop students' abilities to apply their knowledge and skills acquired to solve real-world problems associated with food analysis and food labelling.
Intended Learning Outcomes (Note 1)	Upon completion of the subject, students will be able to: a. recognize clearly the principles behind the analytical methods associated with food analysis; b. select an appropriate analytical technique when presented with a practical problem; c. demonstrate practical proficiency in a food testing laboratory; d. demonstrate abilities in analytical and critical thinking as well as teamwork and communication skills.
Subject Synopsis/ Indicative Syllabus (Note 2)	<ol style="list-style-type: none"> 1. Principles of Gas Chromatography (GC) and High-Performance Liquid Chromatography (HPLC) and their applications in food analysis. 2. Principles of atomic and molecular spectrophotometry and applications of instruments in food analysis. 3. Principles of sample preparation and cleanup for various techniques in food sample analysis. 4. AOAC methods for carbohydrates, protein and moisture content determination for food samples.
Teaching/Learning Methodology (Note 3)	<u>Practical classes:</u> Students will develop their practical skills and learn to apply different instrumental and analytical techniques for food analysis. Students will also develop teamwork and communication skills and learn how to analyze experimental results/data in their practical work.

Assessment Methods in Alignment with Intended Learning Outcomes (Note 4)	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)						
			a	b	c	d			
	1. class performance	20			√	√			
	2. lab report	80	√	√	√				
	Total	100 %							
	Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:								
	Students will need to work in groups to complete their lab work. Such practical training provides a good platform for students to develop their teamwork and communication skills and apply different instrumental/analytical techniques for food analysis.								
	Class performance is to assess outcome (c) and (d); quiz is used to assess outcome (a) and (b); lab report is used to assess outcome (a), (b) and (c).								
Student Study Effort Required	Class contact:								
	▪ Laboratory				18 Hrs.				
	▪ Tutorial				1 Hr.				
	▪								
	Other student study effort:								
	▪ Self study (reading textbooks, reference books, etc.)				12 Hrs.				
	▪ Report writing				12 Hrs.				
	Total student study effort				43 Hrs.				
Reading List and References	<u>Essential</u>								
	Nielsen, S.S. (Ed.)	Food Analysis – Food Science Texts Series (5 th ed.)	Springer 2017						
	Nielsen, S.S. (Ed.)	Food Analysis Laboratory Manual – Food Science Texts Series (2 nd ed.)	Springer 2010						
	Skoog, D.A., Holler, F.J. and Crouch, S.R.	Principles of Instrumental Analysis (7 th ed.)	Thomson 2018						

Note 1: Intended Learning Outcomes

Intended learning outcomes should state what students should be able to do or attain upon completion of the subject. Subject outcomes are expected to contribute to the attainment of the overall programme outcomes.

Note 2: Subject Synopsis/ Indicative Syllabus

The syllabus should adequately address the intended learning outcomes. At the same time over-crowding of the syllabus should be avoided.

Note 3: Teaching/Learning Methodology

This section should include a brief description of the teaching and learning methods to be employed to facilitate learning, and a justification of how the methods are aligned with the intended learning outcomes of the subject.

Note 4: Assessment Method

This section should include the assessment method(s) to be used and its relative weighting, and indicate which of the subject intended learning outcomes that each method purports to assess. It should also provide a brief explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes.