

Enquiry for Course Details

CHEM3242 Food and water analysis (6 credits)		Academic Year	2022															
Offering Department	Chemistry	Quota	50															
Course Co-ordinator	Dr K K H Ng, Chemistry < kkhn3@hku.hk >																	
Teachers Involved	(Dr K K H Ng, Chemistry)																	
Course Objectives	To cover areas in the application and new methodology development in analytical chemistry with focus on food and water analysis.																	
Course Contents & Topics	<p>Chemical Analysis in Practicing Laboratories: Use of standard methods, guidelines and standards for food and water analysis; good laboratory practice; reliability and quality issues in chemical analysis.</p> <p>Food Analysis: Requirement of nutritional labeling; determination of food nutritional value (e.g. total protein content, sodium content); detection of food adulteration and contamination (e.g. presence of banned additives, toxins, undeclared components); recent issues and case studies in food analysis.</p> <p>Water Analysis: Water quality standards; sampling, pretreatment, storage of water samples; theory and technologies for field, laboratory and automated analysis of selected types of water (e.g. drinking water, recreational water, waste water).</p> <p>Analytical Method Development: Selection, application and combination of analytical (e.g. sample digestion, solid phase extraction) and instrumental (e.g. GC, LC, MS) techniques for food and water analysis; method validation (e.g. recovery analysis, analysis of certified reference materials)</p>																	
Course Learning Outcomes	<p>On successful completion of this course, students should be able to:</p> <table border="1"> <tr> <td>CLO 1</td> <td>identify and determine errors and uncertainty of analytical results</td> </tr> <tr> <td>CLO 2</td> <td>apply measures taken to control quality and ensure reliability of analytical results</td> </tr> <tr> <td>CLO 3</td> <td>demonstrate a general knowledge in food and water analysis</td> </tr> <tr> <td>CLO 4</td> <td>understand issues in public health protection related to chemical analysis</td> </tr> <tr> <td>CLO 5</td> <td>carry out analytical techniques used in practicing food and water laboratories</td> </tr> </table>			CLO 1	identify and determine errors and uncertainty of analytical results	CLO 2	apply measures taken to control quality and ensure reliability of analytical results	CLO 3	demonstrate a general knowledge in food and water analysis	CLO 4	understand issues in public health protection related to chemical analysis	CLO 5	carry out analytical techniques used in practicing food and water laboratories					
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Pre-requisites (and Co-requisites and Impermissible combinations)	<p>Pass in CHEM2241 or CHEM2341 or CHEM2441 or CHEM2541.</p> <p>Please note that School of Biological Sciences stipulates that students who have passed CHEM3242 are not allowed to take BIOL3209 Food and nutrient analysis.</p>																	
Course Status with Related Major/Minor /Professional Core	<p>2U000C00 Course not offered under any Major/Minor/Professional core</p> <p>2022 Minor in Chemistry (Disciplinary Elective)</p> <p>2021 Minor in Chemistry (Disciplinary Elective)</p> <p>2020 Minor in Chemistry (Disciplinary Elective)</p> <p>2019 Minor in Chemistry (Disciplinary Elective)</p> <p>2018 Minor in Chemistry (Disciplinary Elective)</p>																	
Course to PLO Mapping																		
Offer in 2022 - 2023	Y	2nd sem	Examination May															
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Course Grade	A+ to F																	
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Assessment Methods and Weighting	Methods	Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping
	Assignments		15	CLO 1,2,3,4
	Examination		50	CLO 1,2,3,4
	Laboratory reports	(experiment & lab report)	20	CLO 1,2,5
	Test		15	CLO 1,2,3,4
Required/recommended reading and online materials	D. A. Skoog, D. M. West, F. J. Holler, S.R. Crouch: Fundamentals of Analytical Chemistry (Cengage Learning, latest edition) References to specialist texts and other published material will be made throughout the course.			
Course Website	NIL			
Additional Course Information	Laboratory classes are mandatory. Students must complete ALL experiments and laboratory reports to pass this course.			