The Chinese University of Hong Kong
Faculty of Science
Science Academy for Young Talent

Summer Courses 2024
Course Outline

CUSA1021 Analysis in Modern Chemistry
現代化學分析

Introduction:

This course aims at introducing the basic concepts and techniques in carrying out chemical analysis by using various modern spectroscopic and chromatographic instruments. Students will learn how to use modern instruments to determine the amounts of substances present in a mixture down to part per million levels (ppm), and identify the structure of a compound. Techniques such as UV-visible spectroscopy, infrared spectroscopy, mass spectrometry, nuclear magnetic resonance spectroscopy, gas chromatography and high performance liquid chromatography will be covered. This course will also discuss some common standard practices of collecting and preparing samples for laboratory testing, the accreditation system in testing laboratories. This course is conducted in the format of lecture.

本課程旨在介紹化學分析中所用到的現代光譜和色譜儀器的基本概念和技術。學生將學習使用該等儀器來分析濃度水平低至百萬分之一的物質，並確定化合物的結構。課程內容包括紫外−可見光譜法、紅外線光譜法、質譜分析法、核磁共振、氣相色譜法及高效能液相色譜法的操作技巧，以及化驗工作中的收集及製備樣本的常用標準技巧和香港化驗室所實行的認可系統。課程以講課形式進行。

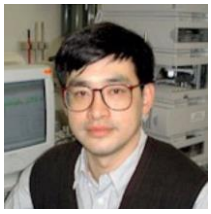
Medium of Instruction:

Cantonese supplemented with English (and written materials in English)
粵語主講及輔以英語 (講義為英文)

Organising Unit:

Department of Chemistry, Faculty of Science, CUHK

Teachers:



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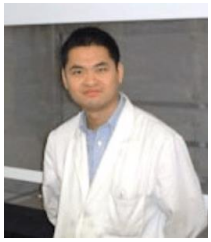

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Course Content:

22 July 2024 (Monday) 9:30 am – 12:30 pm 2:00 pm – 5:00 pm **(Dr. YS Cheung)**	**Lecture:** • UV-visible Spectroscopy • Infrared Spectroscopy • Mass Spectrometry **Assessment:** • Short-answer exercise
24 July 2024 (Wednesday) 9:30 am – 12:30 pm 2:00 pm – 5:00 pm **(Dr. Kendrew Mak)**	**Lecture:** • Nuclear Magnetic Resonance Spectroscopy **Assessment:** • Short-answer exercise
26 July 2024 (Friday) 9:30 am – 12:30 pm **(Dr. WF Chan)**	**Lecture:** • GC and HPLC (Analysing the chemical composition of a sample using advanced chromatographic techniques) • Chemical Testing (Sampling techniques and the accreditation system) **Assessment:** • Essay
30 July 2024* (Tuesday) 9:30 am – 12:30 pm 2:00 pm – 5:00 pm	Make-up Class

Date	22, 24, 26, 30* July 2024 (15 hours)
Time	9:30 am – 12:30 pm &/or 2:00 pm – 5:00 pm
Teaching Mode[#]	Face-to-Face (The Chinese University of Hong Kong)
Enrollment	30
Expected Applicants	Students who are studying in S5-S6 (in the academic year 2023-2024)
Tuition Fee	HKD 3,000.00
Credit	1 Academy Unit(s) *Students can accumulate credits which will be regarded as "Other Learning Experience" when applying University.*
Grading Methods	

	Certificate	***Assessment***	***Attendance***	***Credit(s)***
Distinction	*Certificate of Distinction*	*Excellent*	*>75%*	*1*
Pass	*Certificate of Merit*	*Pass*	*>75%*	*1*
Attended	*Certificate of Attendance*	*Fail*	*>75%*	*0*
Fail	*N/A*	*Fail*	*N/A*	*0*

** This date is reserved for make-up classes in case there is any cancellation of classes due to unexpected circumstances.*