

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

Summer Courses 2022
Course Outline

***CUSA1081 Some Amazing Discoveries in Science:
Principles behind, their Importance, and their Applications***
科學中的一些精彩發現：其背後的原理、重要性及應用

Introduction:

This course covers the stories of some discoveries in science. Students will learn the principle behind, the importance of the discoveries, their applications and the science of a lot of related topics. Topics included: atomic and molecular structure, chemical bonding, fake gold, X-ray, radioactive decay, nuclear reactions, fluorescence and phosphorescence, noble gases, the father of organic chemistry, polymers, chemical analysis (physical methods, elemental analysis, and chromatography), etc. This course is conducted in the format of lecture, supplemented with demonstrations as well as in-class and at-home activities.

本課程涵蓋了一些科學發現的故事。學生將學習其背後的原理、重要性、應用及許多相關主題的科學。主題包括：原子和分子結構、化學鍵、假金、X射線、放射性衰變、核反應、熒光和磷光、惰性氣體、有機化學之父、聚合物、化學分析（物理方法、元素分析及色譜）等。本課程以講課形式進行，輔以示範以及課堂和居家活動。

Medium of Instruction: Cantonese supplemented with English (and written materials in English)

Organising Unit: Department of Chemistry, Faculty of Science, CUHK

Teachers: Dr. Cheung Yu San
Department of Chemistry, CUHK
Rm. 234, Science Centre North, CUHK
Tel: 3943 6265, Email: yscheung@cuhk.edu.hk

Course Content:

<p>15 August 2022 (Monday)</p> <p>9:30 am – 12:30 pm 2:00 pm – 5:00 pm</p>	<p><u>Lecture:</u></p> <ul style="list-style-type: none"> • “All that glitters is not gold” • The discovery of X-ray • The discovery of radioactivity <p><u>Assessment:</u></p> <ul style="list-style-type: none"> • Short-answer exercise
<p>17 August 2022 (Wednesday)</p> <p>9:30 am – 12:30 pm 2:00 pm – 5:00 pm</p>	<p><u>Lecture:</u></p> <ul style="list-style-type: none"> • Cold fusion • Noble gases • The father of organic chemistry <p><u>Assessment:</u></p> <ul style="list-style-type: none"> • Short-answer exercise
<p>19 August 2022 (Friday)</p> <p>9:30 am – 12:30 pm 2:00 pm – 5:00 pm</p>	<p><u>Lecture:</u></p> <ul style="list-style-type: none"> • Polymers <p><u>Assessment:</u></p> <ul style="list-style-type: none"> • Short-answer exercise
<p>23 August 2022* (Tuesday)</p> <p>9:30 am – 12:30 pm 2:00 pm – 5:00 pm</p>	<p>Make-up Class</p>

Duration	3 day sessions (total 18 contact hours)
Date	15, 17, 19 August 2022 23 August 2022* (make-up class)
Time	9:30 am – 12:30 pm; 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 S1-S3 (in the academic year 2021-2022)
Tuition Fee	HKD 3,180.00
Credit	1.25 Academy Unit Certificates or letters of completion will be awarded to students who attain at least 75% attendance and pass the assessment (if applicable).

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

This course will be offered on CUHK campus in face-to-face mode. It may switch to online teaching in accordance with the pandemic development and the policy of the university.