

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

Summer Courses 2020
Course Outline

CUSA2043 An Ocean of Inspiration and Beauty
海洋啟示錄

Introduction:

The oceans cover 70% of the Earth's surface and is the biggest biome on Earth as well as the most important component of the biosphere. Being the cradle of life on Earth, the ocean is also the crucial factor for maintaining life on Earth. In the history of mankind, the oceans have been admired and greatly respected for its significance in the exploration of nature, as well as in the development of human civilization. This course intends to offer an overview of the oceans from perspectives such as culture, history, science, philosophy and arts; as well as to acknowledge the importance of the oceans to mankind and other life forms on Earth. The core concepts include the roles played by the oceans in the development of human civilization, the impact and reliance of human beings on the oceans, ocean processes and the physical, chemical and biological properties of the oceans, diversity of marine ecosystems and marine organisms, how marine organisms solve their specific problems and provide inspirations for solving human problems, the importance of the oceans in maintaining global climatic and ecological balances, as well as how we should protect, conserve and sustainably exploit the oceans for our future generations and all life forms on Earth.

海洋覆蓋了地球七成的表面，是地球最大的生物群系和生物圈最重要的部份。海洋既是地球上生命產的搖籃，又是維持生命的必要關鍵因素。自古以來人類對神祕莫測的海洋既敬畏又嚮往；海洋是人類對自然的探索 以至文明的產生和發展過程中極重要部份。本課程旨在讓學員從文化、歷史、科學、哲學、及藝術等角度去認識海洋；及了解海洋對人類以至其他生物的重要性。主要課程內容包括海洋在人類文明發展的角色、人類對海洋的影響和依賴、各種海洋過程及海洋的物理，化學，生物等方面的特性、海洋生態系和海洋生物的多樣性、海洋生物如何適應獨海洋環境並為人類提供解決問題的靈感、海洋在調節全球氣候和生態平衡的功能、及我們應如何維護、保育及永續地開發海洋等。

Medium of Instruction: Cantonese supplemented with English

Organising Unit:

Centre for Promoting Science Education,
Faculty of Science,
The Chinese University of Hong Kong

Teacher:

Dr. Chung Kwok Cheong
Email: kcchung@cuhk.edu.hk

Course Content:

20 July 2020 (Monday) 2:00 pm – 5:30 pm	<u>Theme 1. Ocean and Man:</u> 1. The oceans and the marine environment; 2. Importance of the oceans; 3. A history of maritime development; 4. The rise and fall of maritime power.
22 July 2020 (Wednesday) 2:00 pm – 5:30 pm	<u>Theme 1. Ocean and Man:</u> 1. Marine resources and their exploitation; 2. Deterioration & conservation of the marine environment.
24 July 2020 (Friday) 2:00 pm – 5:30 pm	<u>Theme 2. Marine Ecosystems:</u> 1. The marine environment, zonation of the oceans, physical and chemical properties; 2. Plate tectonics & associated phenomena; 3. Ocean processes.
27 July 2020 (Monday) 2:00 pm – 5:30 pm	<u>Theme 2. Marine Ecosystems:</u> 1. Coastal marine ecosystems: rocky shores, mangrove forests, estuary / soft-bottom intertidal ecosystems, coral reefs, kelp forests etc. 2. Oceanic marine ecosystems: open oceans and deep oceans, hydrothermal vents and cold seeps etc.
29 July 2020 (Wednesday) 2:00 pm – 5:30 pm	<u>Theme 3. Marine Organisms:</u> 1. Classification of living organisms; 2. Major types of marine organisms.
31 July 2020 (Friday) 2:00 pm – 5:30 pm	<u>Theme 3. Marine Organisms:</u> 1. Survival, adaptation & evolution of marine organisms; 2. Inspirations from marine organisms.

Duration	6 half-day sessions (total 21 contact hours)
Date	20, 22, 24, 27, 29, 31 July 2020
Time	2:00pm - 5:30pm
Venue	On-line
Enrollment	40
Expected applicants	Students who are promoting to or studying S4 - S6
Tuition Fee	HKD 2,688.00
Credit	1.5 Academy Unit Certificates or letters of completion will be awarded to students who attain at least 75% attendance and awarded B grade or above in the course.