

THE EDUCATION UNIVERSITY OF HONG KONG

Course Outline

(for programme development)

Part I

Programme Title	: General Education Breadth Course
Programme QF Level	: N/A
Course Title	: Domestic Chemistry 家居化學
Course Code	: GEH1014
Department	: SES
Credit Points	: 3
Contact Hours	: 39
Pre-requisite(s)	: Nil
Medium of Instruction:	English
Course Level	: 1

Part II

The University's Graduate Attributes and seven Generic Intended Learning Outcomes (GILOs) represent the attributes of ideal EdUHK graduates and their expected qualities respectively. Learning outcomes work coherently at the University (GILOs), programme (Programme Intended Learning Outcomes) and course (Course Intended Learning Outcomes) levels to achieve the goal of nurturing students with important graduate attributes.

In gist, the Graduate Attributes for Undergraduate, Taught Postgraduate and Research Postgraduate students consist of the following three domains (i.e. in short "PEER & I"):

- Professional Excellence;
- Ethical Responsibility; &
- Innovation.

The descriptors under these three domains are different for the three groups of students in order to reflect the respective level of Graduate Attributes.

The seven GILOs are:

1. Problem Solving Skills
2. Critical Thinking Skills
3. Creative Thinking Skills
- 4a. Oral Communication Skills
- 4b. Written Communication Skills
5. Social Interaction Skills

6. Ethical Decision Making
7. Global Perspectives

1. Course Synopsis

This course provides participants with a basic understanding of interesting chemical reactions and their connection with daily living via different themes such as clothing, foods, cosmetics and household products. Selected current socio-scientific issues will be critically examined and discussed by applying scientific knowledge and inquiry skills. Participants are also required to make informed decisions in choosing daily life products by evaluating their impacts on personal health, society and environment.

2. Course Intended Learning Outcomes (CILOs)

Upon completion of this course, students will be able to:

- CILO₁: Explain the physical and chemical properties of selected materials in our daily life (e.g. of clothing, food and beverage, and household products).
- CILO₂: Apply scientific techniques and inquiry skills to prepare and test different foods and household materials.
- CILO₃: Critically analyze information with scientific knowledge and skills about selected current socio-scientific issues.
- CILO₄: Judge the appropriateness of selected domestic products by evaluating their influences on personal health, society and environment.

3. Content, CILOs and Teaching & Learning Activities

Course Content	CILOs	Suggested Teaching & Learning Activities
Clothing <ul style="list-style-type: none"> ➤ Properties, discovery and/or invention of <ul style="list-style-type: none"> ■ Natural polymers (e.g. cotton, silk, linen, etc.) ■ Synthetic polymers (e.g. kevlar, nylon, Teflon, etc.) ➤ Preparations and uses of different types of polymers ➤ Misuse of polymers and their impacts on society and the environment 	CILO _{1,2,3,4}	Lectures, experiments, group discussion, video, case study, search and reading of related issues
Detergent and other cleansing agents <ul style="list-style-type: none"> ➤ Household chemicals: Why detergent and other bleaching agents can clean? ➤ Misuse of cleaning agent and their impacts on health and the environment ➤ Informed decisions in choosing daily life products and their influences on personal health and environment 	CILO _{1,2,3,4}	Experiments, video, lectures, case study, group discussion, field trip

<p>Kitchen and food science</p> <ul style="list-style-type: none"> ➤ Beverage chemistry (e.g. tea, wine, etc.) ➤ Informed decisions in choosing beverage products and their influences on personal health and society ➤ Food additives: how poisonous are they? ➤ Current issues related to food safety and its impacts on personal health, society and the environment ➤ Organic farming ➤ Make your own wine/bread/ice-cream at home and the chemistry behind making different foods 	<i>CILO</i> _{1,2,3,4}	Remote experiments, IT related experiments, video, lectures, case study, group discussion
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4. Assessment

Assessment Tasks	Weighting (%)	CILO
a. Individual quiz (90 minutes)	50%	<i>CILO</i> _{1, 2, 3,4}
b. A group investigation: Each group design and conduct an investigation on a current socio-scientific issue related to a topic listed in the course content and present the results in a poster format.	40%	<i>CILO</i> _{1, 2, 3,4}
c. A group presentation: Based on the investigation, each group orally present the results in around 10 minutes	10%	<i>CILO</i> _{1, 2, 3,4}

5. Required Text(s)

Nil

6. Recommended Readings

American Chemical Society. Meeting, Ho, C., Parliament, T. H., Schieberle, P., & American chemical Society. (2000). *Caffeinated beverages: Health benefits, physiological effects, and chemistry*. Washington, D.C.: American Chemical Society.

- Barham, P. (2000). *The science of cooking*. New York: Springer.
- Carraher, C. E. & Seymour, R.B. (2003). *Giant molecules: essential materials for everyday living and problem solving*. Hoboken, N.J.: Wiley.
- Hill, J. W. & Kolb, D. K. (2007). *Chemistry for changing times (11th ed.)*. Upper Saddle River, N.J.: Pearson Prentice Hall.
- Ho, C., Lin, J., Zheng, Q. Y., & American Chemical Society. (2003). *Oriental foods and herbs: Chemistry and health effects*. Washington, D.C.: American Chemical Society.
- Jackson, R. S., & ScienceDirect. (2008). *Wine science (3rd ed.)*. Amsterdam; Boston: Elsevier/Academic Press.
- Lister, T. & Blumenthal, H. (2005). *Kitchen chemistry*. London: Royal Society of Chemistry.
- Parliment, T. H., Ho, C. T. & Schieberle, P. (2000). *Caffeinated beverages: health benefits, physiological effects, and chemistry*. Washington, D.C.: American Chemical Society.
- Snyder, C. H. (2003). *The extraordinary chemistry of ordinary things (4th ed.)*. Hoboken, NJ: J. Wiley.
- Waldron, K. (2007). *The chemistry of everything*. Upper Saddle River, N.J.: Pearson Prentice Hall.
- 陳潤杰(2002)：《漫遊生活的化學》，香港，香港教育圖書公司。
- 米山正信著，張慧華譯(2002)：《圖解生活化學世界》，臺北縣新店市，世茂出版社。
- 曹松青(2011)：《生活中不可不知的物理化學常識 (初版 ed.)》，台北市，讀品文化。

7. Related Web Resources

香港特別行政區政府:食物安全中心 <http://www.cfs.gov.hk/cindex.html>
 消費者委員會 http://www.consumer.org.hk/website/ws_chi/

8. Related Journals

Nil

9. Academic Honesty

The University adopts a zero tolerance policy to plagiarism. For the University's policy on plagiarism, please refer to the *Policy on Academic Honesty, Responsibility and Integrity with Specific Reference to the Avoidance of Plagiarism by Students*

(<https://www.eduhk.hk/re/modules/downloads/visit.php?cid=9&lid=89>). Students should familiarize themselves with the Policy.

10. Others

Nil