Major / Minor Requirement (2010-2011) - amended

Major Title	Major in Chemistry
Department	Chemistry
Offered to students admitted to Year 1 in	**2010-2011**

Objectives:
The Chemistry curriculum at the University of Hong Kong aims to provide students with a solid training in the major areas of chemistry. The curriculum includes core courses covering topics in physical, inorganic, organic, analytical and applied chemistry. A wide selection of elective courses, for instance, food and water analysis, medicinal chemistry and computational chemistry, is also available to provide students with practical knowledge and training to help them meet the dynamic and ever-changing challenges in science and technology. Graduates of the Chemistry-Major programme will be proficient in the principles and experimental skills of chemistry. The Chemistry-Major programme will also equip students with transferable skills in both theoretical and experimental investigations in sciences that are very crucial for their future careers in a knowledge-based economy.

Our curriculum emphasizes both theory and application. Chemical principles and concepts covered in the curriculum can be easily applied to many aspects of life, such as the collection and analysis of forensic evidence, knowledge of drugs and diseases, and the analysis and identification of hazardous substances in consumer products such as pesticide residues in vegetables and food additives. It is expected that our graduates will be able to meet local and regional requirements in the industrial, commercial, government or education sectors and will become future leaders of these sectors.

Learning Outcomes:
a. Students would acquire and apply knowledge in different fields of chemistry, such as physical, inorganic, organic, applied and analytical chemistry.
(by means of coursework, laboratory-based, research-based and learning activities in the curriculum)

b. Students would acquire and apply knowledge in modern chemistry laboratory operations, and receive solid hands-on experience to practise the experimental skills and use instrumentation in various fields of chemistry.
(by requiring no less than 100 hours of laboratory classes in the curriculum)

c. Students would acquire and apply major techniques in chemical synthesis, analysis, and characterization by means of chemical instrumentation.
(by means of coursework, laboratory-based and research-based learning in the curriculum)

d. Students would gain insight into the operation of local chemical industries and other chemistry careers.
(by participating in student field trip opportunities in the curriculum)

e. Students would be able to personally experience the real-life industrial or research environment, and develop their initiative and interpersonal skills
(by arrangement for student internship opportunities or directed studies of no less than three weeks with chemistry-related companies or research laboratories.)

Minimum Entry Requirement:
AL Chemistry or equivalent or a pass in CHEM0008 Fundamental chemistry

Minimum Credit Requirement:
72 credits (18 credits introductory level, 54 credits advanced level courses including experiential learning requirement)

Impermissible Combination:
Minor in Chemistry

Required courses (72 credits)

1. Introductory level courses (18 credits)
CHEM1002 Chemistry: principles and concepts 6
CHEM1003 Chemistry: the molecular world 6
CHEM1004 Chemistry: an experimental science I 6

2. Advanced level courses (48 credits)
CHEM2202 Chemical instrumentation 6
CHEM2303 Intermediate inorganic chemistry 6
CHEM2403 Intermediate organic chemistry 6
CHEM2504 Physical Chemistry I: Introduction to Quantum Chemistry 6
CHEM2510 Principles and applications of spectroscopic and analytical techniques 6

Plus 18 credits of advanced level Chemistry courses (CHEM2XXX or CHEM3XXX level including at least 12 credits of the following courses from two different areas (note 1):
(1) CHEM3305 Advanced Inorganic Chemistry
(2) CHEM3406 Integrated Organic Synthesis or CHEM3404 Advanced Organic Chemistry
(3) CHEM3507 Physical Chemistry II: Statistical Thermodynamics and Kinetic Theory

3. Experiential learning requirement (6 credits) *
Students must take at least one of the following forms of extra-ordinary learning experience to fulfill the experiential learning requirement:

- CHEM2111 Directed studies in chemistry 6
- CHEM3105 Chemistry project 12
- CHEM3988 Chemistry internship 6
- SCNC2005 Career development for science students (non-credit bearing)
- SCNC2988 Service learning internship (non-credit bearing)
- Exchange study via HKU Worldwide or Science Faculty/Department Level (1st sem/2nd sem/1 yr) (non-credit bearing)
- Any other activities determined by the Faculty to conform to the spirit o experiential learning experience (non-credit bearing)

* If the experiential learning requirement is fulfilled by non-credit bearing activities, students must take an additional 6-credit advanced level Chemistry course (CHEM2XXX or CHEM3XXX level).
Students are not required to take EL if this Science major is taken as a second major but a 6-credit advanced level course in the second major must be taken to fulfill the credit requirement.

Notes:
1 Students who wish to specialize in a certain area are recommended to choose courses from the following lists.
(a) For students who are interested in Analytical Chemistry: CHEM2102, CHEM2207, CHEM3203, CHEM3204.
(b) For students who are interested in Applied Chemistry: CHEM2103, CHEM3107, CHEM3110, CHEM3204.
(c) For students who are interested in Medicinal Chemistry: CHEM3403, CHEM3404, CHEM3405, CHEM3407.
(d) For students who are interested in Pure Chemistry: CHEM3106, CHEM3303, CHEM3403, CHEM3504/CHEM3513.

Remarks:
Important! Ultimate responsibility rests with students to ensure that the required pre-requisites and co-requisite of selected courses are fulfilled. Students must take and pass all required courses in the selected major or/and minor in order to satisfy the degree graduation requirements. Courses which appear in 2 or more majors or minors will only be counted once.

Last updated by CHEM on 2011/07/13

Major / Minor Enquiry (2010-2011)

Minor Title	Minor in Chemistry
Department	Chemistry
Offered to students admitted to Year 1 in	**2010-2011**

Objectives:
The Chemistry minor is aimed to provide students who are interested in chemistry with an introduction to the fundamental concepts of chemistry. The minor curriculum is designed to provide students from different science majors with a high degree of flexibility of selecting courses to enhance their knowledge and interest in chemistry.

Learning Outcomes:
a. to understand and apply the basic concepts of chemistry;
(by means of coursework and laboratory-based learning in the curriculum)

b. to apply chemistry concepts in other subjects;
(by means of coursework and laboratory-based learning in the curriculum)

c. to transfer the basic concepts to complement their major of study.
(by means of coursework and laboratory-based learning in the curriculum)

Minimum Entry Requirement:
AL Chemistry or a pass in CHEM0008 Fundamental chemistry or equivalent

Minimum Credit Requirement:
36 credits (12 credits introductory level & 24 credits advanced level courses)

Impermissible Combination:
Major in Chemistry

Required courses (36 credits)

1. Introductory level courses (12 credits)
12 credits of the following courses:

CHEM1002 Chemistry: principles and concepts (note 1) 6
CHEM1003 Chemistry: the molecular world 6
CHEM1009 Basic chemistry (note 1) 6
CHEM1401 Fundamentals of organic chemistry 6

2. Advanced level courses (24 credits)
Any 24 credits of advanced level Chemistry courses (CHEM2XXX or CHEM3XXX level), subject to prerequisite requirements.

Notes:
1 CHEM1002 and CHEM1009 are mutually exclusive

Remarks:
Important! Ultimate responsibility rests with students to ensure that the required pre-requisites and co-requisite of

selected courses are fulfilled. Students must take and pass all required courses in the selected major or/and minor in order to satisfy the degree graduation requirements. Courses which appear in 2 or more majors or minors will only be counted once.

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