CIR-TPG

香港城市大學
City University of Hong Kong

Curriculum Information Record for a Taught Postgraduate Programme

Department of Chemistry
Effective from Semester A 2020/21
For Students Admitted with Catalogue Term
Semester A 2020/21 and thereafter

This form is for completion by the *Programme Leader*. The information provided on this form is the official record of the Programme. It will be used for City University's database, various City University publications (including websites) and documentation for students and others as required.

In specifying the curriculum for a Programme, "catalogue term" is used to determine the set of curriculum requirements that a student is following. By mapping the student record and the version of curriculum rules applicable, the graduation requirements of individual students will be evaluated accordingly. The catalogue terms of curriculum requirements that students will follow are summarized below.

Prepared / Last Updated by

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Part I Programme Overview

Programme Title (in English) : Master of Science in Chemistry
(in Chinese) : 理學碩士(化學)

Award Title[#] (in English) : Master of Science in Chemistry
(in Chinese) : 理學碩士(化學)

 # Please make reference to the "Guidelines on Award Titles" approved by the Senate when proposing new award titles or changes to existing award titles (Senate/86/A5R).

1. Normal and Maximum Period of Study

	Years (full-time)	**Years (part-time/combined mode)**
Normal period of study	1 year	2 years
Maximum period of study	2.5 years	5 years

2. Number of Credit Units Required for the Award:

Award	**Credit Units**
Master of Science in Chemistry	34

3. Programme Aims

This programme aims to train and produce graduates with highly marketable research skills and experiences in a wide variety of advanced chemistry disciplines, such as catalysis; synthetic chemistry; materials & biomaterials chemistry; analytical & bio-analytical science; computational chemistry; environmental chemistry and chemical biology, to meet local, regional and global demands for R&D specialists in the industrial, commercial, and government sectors. Graduates are also eligible for pursuing higher research degrees in local and overseas universities and research institutes.

4. Programme Intended Learning Outcomes (PILOs)

(Please state what the student is expected to be able to do on completion of the programme according to a given standard of performance.)

Upon successful completion of this Programme, students should be able to:

No.	*PILOs*	*Discovery-enriched curriculum related learning outcomes (please tick where appropriate)*		
		A1	*A2*	*A3*
	Develop technical competence and skills necessary for carrying out original research in academic and industrial research environment.			
1.	• Acquire and organize resource materials.		✓	
2.	• Present materials effectively, both orally and in writing.		✓	
3.	• Participate confidently in co-operative or independent projects.	✓	✓	✓
	Acquire and integrate advanced knowledge from a variety of disciplines especially chemical principles and research methodologies via discovery-based studies in order to become effective problem solvers and innovators.			
4.	• Recognize the relation between theory and practices in selected areas of study.	✓	✓	
5.	• Identify and analyze the limitations and challenges in existing research and methodology through critical evaluation of chemical information and key findings of scientific papers.	✓	✓	
6.	• Have an informed respect for the knowledge and technical skills in chemistry and molecular sciences, with special emphasis on the molecular design, chemical methodology, operations of advanced chemical instrumentations and laboratory procedures in synthetic and analytical chemistry.	✓	✓	
7.	• Evaluate experimental data through testing hypotheses, defining problems and creating innovative and practical solutions.	✓		✓
	Create new knowledge, methodology and understanding through the process of research and inquiry.			
8.	• Carry out research and development work.	✓	✓	✓
9.	• Develop expertise in a chosen subject area through conducting research as well as the application of theory and techniques provided by the programme.	✓	✓	✓
10.	• Manage and present research findings in a precise and coherent manner.	✓	✓	✓

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishments of discovery/innovation/creativity through producing/constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Part II Programme Requirement

1. Core Courses (34 credit units)

Course Code	Course Title	Level	Credit Units	Remarks (e.g. College Accreditation, or Exemption Requirements, etc.)
CHEM6118	Advanced Chemical Instrumentation	P6	3	
CHEM6119	Frontiers in Chemical Biology	P6	3	
CHEM6120	Selected Topics in Chemistry & Molecular Sciences	P6	4	
CHEM6121	Academic and Industrial Research, Development and Innovation	P6	3	
CHEM6122	Advanced Seminar Series	P6	4	
CHEM6123	Postgraduate Symposium	P6	1	
CHEM6124	Dissertation	P6	16	

Part III Accreditation by Professional / Statutory Bodies

Nil

Part IV Additional Information

1. The validity period for courses recognized at the time of admission for credit transfer purposes is eight (8) years.

Part V Curriculum Map

(The curriculum map shows the mapping between courses and the PILOs. It should cover all courses designed specifically for the programme.)

Course			PILOs										DEC		
Code	**Title**	**Credit**	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**P9**	**P10**	**A1**	**A2**	**A3**
Core Courses															
CHEM6118	Advanced Chemical Instrumentation	3	✓			✓	✓	✓						✓	
CHEM6119	Frontiers in Chemical Biology	3	✓			✓	✓	✓					✓	✓	
CHEM6120	Selected Topics in Chemistry & Molecular Sciences	4	✓	✓		✓	✓	✓				✓	✓	✓	✓
CHEM6121	Academic and Industrial Research, Development and Innovation	3	✓	✓	✓	✓	✓	✓			✓			✓	✓
CHEM6122	Advanced Seminar Series	4	✓	✓		✓	✓	✓	✓				✓	✓	✓
CHEM6123	Postgraduate Symposium	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CHEM6124	Dissertation	16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishments of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Part VI Research Elements in Programme Design

(A description on how research elements are embedded in the proposed programme design for ALL students as guided by the 2016-19 Academic Development Proposal (ADP) should be included. Research elements need to be incorporated into core or compulsory course(s) in order that all students can be benefited from the learning experience.)

Description on how research elements are embedded in the programme design:

- With the solid fundamental knowledge in chemistry and molecular sciences covered by various taught courses including *CHEM6118 Advanced Chemical Instrumentation*, *CHEM6119 Frontiers in Chemical Biology*, *CHEM6120 Selected Topics in Chemistry & Molecular Sciences*, students can acquire postgraduate level chemistry and molecular sciences.
- The courses of *CHEM6122 Advanced Seminar Series* and *CHEM6123 Postgraduate Symposium* will allow students to choose specific subject area for specialization.
- In the course of *CHEM6121 Academic and Industrial Research, Development and Innovation*, students will acquire knowledge of scientific research from various perspectives including its role to increase the basic and applied knowledge of mankind as part of the development of a sustainable society and the methods of management of research, development and innovation.
- Students will not only acquire knowledge from the above-taught courses, they will also take part in the research projects in the *CHEM6124 Dissertation*, which is closely supervised by a CHEM academic staff.

Core/Compulsory Courses

Course Code	Course Title	Level	Credit Units	Information on research elements in the course design*
CHEM6124	Dissertation	6	16	Literature review; setting hypothesis and research objectives; design of experiment for testing the hypothesis and achieving the research objective; laboratory works – performing research experiments and physical measurements, conducting collaborative research work, data analysis and discussion with laboratory coworkers; delivering progress presentations; writing research paper and report; oral examination.

**indicative of planned teaching and learning activities / assessment tasks incorporating research elements*