(Study Scheme - English)

Programme Title
Chemistry

Study Scheme

Applicable to students admitted in 2022-23 and 2023-24

Major Programme Requirement

Students are required to complete a minimum of 72 units of courses as follows:

		Units
1.	School Package:	
	CHM1001, CSC1001, 1002, MAT1001, 1002, 2040, PHY1001, STA2001	22
2.	Required Courses:	
	BIO2004, CHM2002, 2110, 2118, 2210, 2228, 2310, 2320, 2338, 3418, 3520, 3530	33
3.	Elective Courses:	17
(a)	2 units of courses from the following list: CHM4510, 4530	
(b)	6 units of courses from the following list: CHM3110, 3130, 3210, 3310, 3320, 3420, 3540, MSE2012, 2021, 3002, 3007, 3011/6002, 3013	
(c)	9 units of courses from the following list: BIO1001, CHM4210, 4328, 4330, 4340, 4342, 4410, 4422, 4630, 4710, MSE3001, 4005, PHM2006, PHY3410, 4001, 4221	
	Total:	**72**

Notes:

[a] Students can choose to take either MAT2040 or MAT2042 to fulfill the graduation requirement.

[b] Students can choose to take either STA2001 or STA2001H to fulfill the graduation requirement.

[c] Students can choose to take either CSC1001 and CSC1002 or CSC1003 and CSC1004 to fulfill the graduation requirement.

[d] CHM1001 and all Major Required and Major Elective courses at 2000 level and above will be included in the calculation of Major GPA for honours classification.

(Study Scheme - Chinese)

課程名稱

化學

修讀辦法

二〇二二至二三年度及二〇二三至二四年度入學學生適用

主修課程要求

學生須至少修畢以下科目共 72 學分：

		學分
1.	學院課程：	
	CHM1001, CSC1001, 1002, MAT1001, 1002, 2040, PHY1001, STA2001	22
2.	必修科目：	
	BIO2004, CHM2002, 2110, 2118, 2210, 2228, 2310, 2320, 2338, 3418, 3520, 3530	33
3.	選修科目：	17
(a)	從以下科目選修 2 學分： CHM4510, 4530	
(b)	從以下科目選修 6 學分： CHM3110, 3130, 3210, 3310, 3320, 3420, 3540, MSE2012, 2021, 3002, 3007, 3011/6002, 3013	
(c)	從以下科目選修 9 學分： BIO1001, CHM4210, 4328, 4330, 4340, 4342, 4410, 4422, 4630, 4710, MSE3001, 4005, PHM2006, PHY3410, 4001, 4221	
	共：	**72**

註：

[a] 學生可以修讀 MAT2040 或 MAT2042 以滿足畢業要求。

[b] 學生可以修讀 STA2001 或 STA2001H 以滿足畢業要求。

[c] 學生可以修讀 CSC1001, CSC1002 或 CSC1003, CSC1004 以滿足畢業要求。

[d] CHM1001 以及所有 2000 及以上程度的主修必修和主修选修科目將會計入主修科目之平均績點，並用以釐定學位等級。

(Recommended Course Pattern – English)

Recommended Course Pattern

1. Sufficient units should be allowed in each term for students to fulfill the University Core Requirements, which include: (i) 3 units of Chinese; (ii) 12 units of English; (iii) 1 unit of IT; (iv) 18 units of General Education; and (v) 2 units of Physical Education and Health.
2. Programmes with different streams/concentrations are required to provide the recommended pattern for each stream/concentration.

	Major Programme Requirement of <u>Chemistry</u>	
	Recommended Course Pattern	**Units**
First Year of Attendance	1st term School Package: CHM1001, CSC1001(or CSC1003), MAT1001	9
	2nd term School Package: CSC1002(or CSC1004), MAT1002, MAT2040(or MAT2042), PHY1001	10
Second Year of Attendance	1st term School Package: STA2001(or STA2001H) Major Required: CHM2210, 2228	 3 5
	2nd term Major Required: CHM2110, 2118, 2310, 2338	11
Third Year of Attendance	1st term Major Required: CHM2320, 3520 Major Elective(s): BIO1001 or CHM3130 or 3310 or MSE2012 or 3011/6002 or 3013	 6 3
	2nd term Major Required: BIO2004, CHM2002, 3418 Major Elective(s): CHM3110 or 3210 or 3320 or 3420 or 3540 or 4328 or MSE2021 or 3002 or PHM2006 or PHY3410 or 4001 or 4221	 8 3
Fourth Year of Attendance	1st term Major Required: CHM3530 Major Elective(s): Two courses selected from CHM4330, 4410, 4422, 4630, MSE3007, 4005	 3 6
	2nd term Major Elective(s): One course selected from CHM4210 or 4340 or 4342 or 4710 or MSE3001 One course selected from CHM4510 or 4530	 3 2
Total (Major Requirement including School Package):		**72**

(Recommended Course Pattern – Chinese)

<u>修課推介</u>

1. 每學期均須預留足夠學分讓同學符合大學核心課程要求，包括：(一) 中文三學分；(二) 英文十二學分；(三) 信息科技一學分；(四) 通識教育十八學分及 (五) 體育與健康兩學分。
2. 有不同專修範圍的課程須為每項專修範圍提供修課推介。

	化學主修課程要求	
	修課推介	**學分**
第一修業學年	第一學期 學院課程: CHM1001, CSC1001(or CSC1003), MAT1001	9
	第二學期 學院課程: CSC1002(or CSC1004), MAT1002, MAT2040(or MAT2042), PHY1001	10
第二修業學年	第一學期 學院課程: STA2001(or STA2001H) 主修必修科目: CHM2210, 2228	3 5
	第二學期 主修必修科目: CHM2110, 2118, 2310, 2338	11
第三修業學年	第一學期 主修必修科目: CHM2320, 3520 主修選修科目: 從以下選修一科 BIO1001 或 CHM3130 或 3310 或 MSE2012 或 3011/6002 或 3013	6 3
	第二學期 主修必修科目: BIO2004, CHM2002, 3418 主修選修科目: 從以下選修一科 CHM3110 或 3210 或 3320 或 3420 或 3540 或 4328 或 MSE2021 或 3002 或 PHM2006 或 PHY3410 或 4001 或 4221	8 3
第四修業學年	第一學期 主修必修科目: CHM3530 主修選修科目: 從以下選修兩科 CHM4330, 4410 , 4422, 4630, MSE3007, 4005	3 6
	第二學期 主修選修科目: 從以下選修一科 CHM4210 或 4340 或 4342 或 4710 或 MSE3001 從以下選修一科 CHM4510 或 4530	3 2
	合共（主修要求包括學院課程）：	**72**

Course List

I. School Package for the School of Science and Engineering

Course Code		Course Title (English)	Course Title (Chinese)	Unit(s)
CHM1001		General Chemistry	普通化學	3
Option C#	CSC1001	Introduction to Computer Science: Programming Methodology	計算機科學導論：程序設計方法	3
	CSC1002	Computational Laboratory	計算機實驗	1
Option D#	CSC1003	Introduction to Computer Science and Java Programming	計算機科學與 Java 程序設計導論	3
	CSC1004	Computational Laboratory Using Java	Java 程序設計實驗	1
MAT1001		Calculus I	微積分（一）	3
MAT1002		Calculus II	微積分（二）	3
Option A#	MAT2040	Linear Algebra	線性代數	3
Option B#	MAT2042*	Honours Linear Algebra	線性代數榮譽課程	3
PHY1001		Mechanics	力學	3
Option E#	STA2001	Probability and Statistics I	概率及統計（一）	3
Option F#	STA2001H*	Honours Probability and Statistics I	概率及統計榮譽課程（一）	3

Remark:

1. Students can choose to take either Option A or Option B to fulfill the graduation requirement.
2. Students can choose to take either Option C or Option D to fulfill the graduation requirement.
3. Students can choose to take either Option E or Option F to fulfill the graduation requirement.

II. Major Required courses

Course Code	Course Title (English)	Course Title (Chinese)	Unit(s)
BIO2004	Biochemistry	生物化學	3
CHM2002	Physical Chemistry	物理化學	3
CHM2110	Analytical Chemistry	分析化學	3
CHM2118	Analytical Chemistry Laboratory	分析化學實驗	2
CHM2210	Inorganic Chemistry	無機化學	3
CHM2228	Inorganic Chemistry Laboratory	無機化學實驗	2
CHM2310	Organic Chemistry I (equal to CHM2001)	有機化學（一）（相當於 CHM2001）	3
CHM2320	Organic Chemistry II	有機化學（二）	3
CHM2338	Organic Chemistry Laboratory	有機化學實驗	3
CHM3418	Physical Chemistry Laboratory	物理化學實驗	2
CHM3520	Introduction to Materials Science and Engineering	材料科學與工程導論	3
CHM3530	Polymer Chemistry	高分子化學	3

III. Major Elective courses

Course Code	Course Title (English)	Course Title (Chinese)	Unit(s)
BIO1001	General Biology	普通生物學	3
CHM3110	Advanced Analytic Chemistry and Experiments	高等分析化學及實驗	3
CHM3130	Fundamentals of Spectroscopy, Microscopy and Chromatography	光譜學、顯微學、色譜學基礎	3
CHM3210	Advanced Inorganic Chemistry	高等無機化學	3
CHM3310	Advanced Structure Elucidation in Organic Molecules	高等有機結構分析	3
CHM3320	Advanced Organic Chemistry: Reactivity, Structures, Mechanisms and Experiments	高等有機化學 （反應，結構，機理及實驗）	3
CHM3420	Advanced Physical Chemistry (Structural Chemistry)	高等物理化學（結構化學）	3
CHM3540	Introduction to Functional Materials	功能材料導論	3
CHM4210	Transition Metals and Coordination Chemistry	過渡金屬與配位化學	3
CHM4328	Advanced Organic Synthesis Laboratory	高等有機合成實驗	3
CHM4330	Organometallic Chemistry and Catalysis	金屬有機化學及催化	3
CHM4340	Modern Organic Synthesis	現代有機合成	3
CHM4342	AI for Chemistry	化學中的人工智能	3
CHM4410	Solid State Chemistry	固體化學	3
CHM4422	Chemical Kinetics and Catalysis	化學動力學與催化	3
CHM4510	Undergraduate Special Project (alternative)	專門研究課題	2
CHM4530	Undergraduate Thesis	畢業論文設計	2
CHM4630	Medicinal Chemistry	藥物化學	3
CHM4710	Chemical Biology	化學生物學	3
MSE2012*	Micro and Nano Structures of Materials	材料的微納結構	3
MSE2021*	Materials Mechanics	材料力學	3
MSE3001	Computational Materials Science with AI	計算材料科學與人工智能	3
MSE3002	Microstructural Evolution in Materials	材料微觀結構的演變	3
MSE3007	Electronic, Optical, and Magnetic Properties of Materials	材料的電學、光學及磁學性質	3
MSE3011 (MSE6002)	Engineering Economics and Management	工程經濟與管理	3
MSE3013	Principles of Chemical Engineering	化工原理	3
MSE4005	Nanoscale Materials	納米材料	3
PHM2006*	Medicinal Chemistry for Pharmaceutical Professionals	藥物化學（藥學專業）	3
PHY3410	Quantum Mechanics and its Applications I	量子力學（一）	3
PHY4001	Solid-State Physics	固體物理	3
PHY4221	Quantum Mechanics	量子力學	3

* The course title of MAT2042 is Linear Algebra I for students who study the course before 2023-24 term 1. For students who study this course from 2023-24 term 1, the course title is Honours Linear Algebra.
在 2023-24 學年第一学期前修讀 MAT2042，科目名稱為「線性代數（一）」。在 2023-24 學年第一学期及以後修讀該科目，科目名稱為「線性代數榮譽課程」。

* The course title of PHM2006 is Medicinal Chemistry and Laboratory for students who study the course before 2024-25 term 1. For students who study this course from 2024-25 term 1, the course title is Medicinal Chemistry for Pharmaceutical Professionals.
在 2024-25 學年第一学期前修讀 PHM2006，科目名稱為「藥物化學與實驗」。在 2024-25 學年第一学期及以後修讀該科目，科目名稱為「藥物化學（藥學專業）」。

* The course title of STA2003 is Probability for students who study the course before 2024-25 term 1. For students who study this course from 2024-25 term 1, the course code is STA2001H and the title is Honours Probability and Statistics I.
在 2024-25 學年第一学期前修讀 STA2003，科目名稱為「概率論基礎」。在 2024-25 學年第一学期及以後修讀該科目，科目代號及名稱分別為「STA2001H」及「概率及統計榮譽課程（一）」。

* The course title of MSE2012 is Materials Chemistry for students who study the course before 2025-26 term 1. For students who study this course from 2025-26 term 1, the course title is Micro and Nano Structures of Materials.
在 2025-26 學年第一学期前修讀 MSE2012，科目名稱為「材料化學」。在 2025-26 學年第一学期及以後修讀該科目，科目名稱為「材料的微納結構」。

* The course title of MSE2021 is Materials Physics for students who study the course before 2025-26 term 1. For students who study this course from 2025-26 term 1, the course title is Materials Mechanics.
在 2025-26 學年第一学期前修讀 MSE2021，科目名稱為「材料物理」。在 2025-26 學年第一学期及以後修讀該科目，科目名稱為「材料力學」。