

**(Study Scheme - English)**

**Programme Title**

Chemistry

**Study Scheme**

**Applicable to students admitted in 2024-25 and thereafter**

**Major Programme Requirement**

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

	Units
1. School Package: CHM1001, CSC1005, 1006, MAT1001, 1002, 2040, PHY1001, STA2001	22
2. Required Courses: BIO2004, CHM2002, 2110, 2118, 2228, 2210, 2310, 2320, 2338, 3418, 3520, 3530	33
3. Elective Courses:	17
(a) 2 units of course selected from the following: CHM4510, 4530	
(b) 6 units of courses selected from the following: CHM3110, 3130, 3210, 3310, 3320, 3420, 3540, MSE2012, 2021, 3002, 3007, 3011/6002, 3013	
(c) 9 units of courses selected from the following: BIO1001, CHM4210, 4328, 4330, 4340, 4351, 4410, 4422, 4630, 4710, MSE4005, PHM2006, PHY3410, 4001, 4221	
<b>Total:</b>	<b>72</b>

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 or CSC1005 and CSC1006 to fulfill the graduation requirement.

[d] CHM1001/CHM1011 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.

[e] Students can choose to take either CHM1001 or CHM1011 to fulfill the graduation requirement.

(Study Scheme - Chinese)

課程名稱

化學

修讀辦法

二〇二四至二五年度及以後入學學生適用

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, CSC1005, 1006, MAT1001, 1002, 2040, PHY1001,  
STA2001

22

2. 必修科目：

BIO2004, CHM2002, 2110, 2118, 2228, 2210, 2310, 2320, 2338,  
3418, 3520, 3530

33

3. 選修科目：

17

(a) 從以下選修 2 學分：

CHM4510, 4530

(b) 從以下選修 6 學分：

CHM3110, 3130, 3210, 3310, 3320, 3420, 3540, MSE2012, 2021,  
3002, 3007, 3011/6002, 3013

(c) 從以下選修 9 學分：

BIO1001, CHM4210, 4328, 4330, 4340, 4351, 4410, 4422, 4630,  
4710, MSE4005, PHM2006, PHY3410, 4001, 4221

共：

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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 或 CSC1005, CSC1006 以滿足畢業要求。

[d] CHM1001/CHM1011 以及所有 2000 及以上程度的主修必修和主修選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。

[e] 學生可以修讀 CHM1001 或 CHM1011 以滿足畢業要求。

## (Recommended Course Pattern – English)

Recommended Course Pattern

- 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.
- Programmes with different streams/concentrations are required to provide the recommended pattern for each stream/concentration.

<b>Major Programme Requirement of <u>Chemistry</u></b>		
	<b>Recommended Course Pattern</b>	<b>Units</b>
<b>First Year of Attendance</b>	1 <sup>st</sup> term School Package: CHM1001(or CHM1011), CSC1005(or CSC1001 or CSC1003), MAT1001	9
	2 <sup>nd</sup> term School Package: CSC1006(or CSC1002 or CSC1004), MAT1002, MAT2040(or MAT2042), PHY1001	10
<b>Second Year of Attendance</b>	1 <sup>st</sup> term School Package: STA2001(or STA2001H) Major Required: CHM2210, 2228	3 5
	2 <sup>nd</sup> term Major Required: CHM2110, 2118, 2310, 2338	11
<b>Third Year of Attendance</b>	1 <sup>st</sup> term Major Required: CHM2320, 3520 Major Elective(s): BIO1001 or CHM3130 or 3310 or MSE2012 or 3011 or 3013	6 3
	2 <sup>nd</sup> 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
<b>Fourth Year of Attendance</b>	1 <sup>st</sup> term Major Required: CHM3530 Major Elective(s): Two courses selected from CHM4330, 4410, 4422, 4630, MSE3007, 4005	3 6
	2 <sup>nd</sup> term Major Elective(s): One course selected from CHM4210 or 4340 or 4710 One course selected from CHM4510 or 4530	3 2
<b>Total (Major Requirement including School Package):</b>		<b>72</b>

## (Recommended Course Pattern – Chinese)

## 修課推介

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(or CHM1011), CSC1005(or CSC1001 or CSC1003), MAT1001	9
	第二學期 學院課程: CSC1006(or 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 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
第四修業學年	第二學期 主修選修科目: 從以下選修一科 CHM4210 或 4340 或 4710 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)
Option H <sup>#</sup>	CHM1001	General Chemistry	普通化學	3
Option I <sup>#</sup>	CHM1011	Honours General Chemistry	普通化學榮譽課程	3
Option C <sup>#</sup>	CSC1001	Introduction to Computer Science: Programming Methodology	計算機科學導論：程式設計方法	3
	CSC1002	Computational Laboratory	計算機實驗	1
Option D <sup>#</sup>	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
Option E <sup>#</sup>	CSC1005	Introduction to Computer Engineering: Programming and Applications	計算機工程導論：程序設計與應用	3
	CSC1006	Artificial Intelligence for Science and Engineering	人工智能在科學與工程中的應用	1
MAT1001		Calculus I	微積分（一）	3
MAT1002		Calculus II	微積分（二）	3
Option A <sup>#</sup>	MAT2040	Linear Algebra	線性代數	3
Option B <sup>#</sup>	MAT2042*	Honours Linear Algebra	線性代數榮譽課程	3
PHY1001		Mechanics	力學	3
Option F <sup>#</sup>	STA2001	Probability and Statistics I	概率及統計（一）	3
Option G <sup>#</sup>	STA2001H*	Honours Probability and Statistics I	概率及統計榮譽課程（一）	3

<sup>#</sup> Remark:

- Students can choose to take either Option A or Option B to fulfill the graduation requirement.
- Students can choose to take either Option C or Option D or Option E to fulfill the graduation requirement.
- Students can choose to take either Option F or Option G to fulfill the graduation requirement.
- Students can choose to take either Option H or Option I 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
CHM2228	Inorganic Chemistry Laboratory	無機化學實驗	2
CHM2210	Inorganic Chemistry	無機化學	3
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
CHM4351	Organocatalysis	有機催化	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 (alternative)	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	Materials Chemistry	材料化學	3
MSE2021	Materials Physics	材料物理	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	量子力學 (一)	3

	Applications I		
PHY4001	Solid-State Physics	固體物理	3
PHY4221	Quantum Mechanics	量子力學	3