

(Study Scheme - English)

Programme Title Computer Science and Engineering	
Study Scheme <p style="text-align: center;">Applicable to students admitted in 2024-25 and thereafter</p> Major Programme Requirement Students are required to complete a minimum of 70 units of courses as follows:	
	Units
1. School Package: BIO1008, CSC1003, 1004 ^[b] , DDA2001, MAT1001 or 1011, 1002 or 1012, 2041 or 2041A, PHY1001, STA2001 or 2001H	25
2. Required Courses: CSC3001, 3060, 3200, 3150, 4120 or 4120H, DDA3020 or 3020H	20
3. Elective Courses: 25 units selected from two groups, no less than 16 units from (a).	
(a) CSC2003, 3002, 3102, 3120, 3160, 3170, 3180, 3185, 4001,4005, 4008, 4010, 4012, 4100, 4130, 4140, 4150, 4160, 4180, 4190, 4303, DDA4080, 4210, 4220, 4230, ECE3080, 4016	16
(b) BIM3001, DDA3003, 3005, 4002, 4240, 4260, 4310, ECE3060, 3200, 4011, 4310, 4513, ECO3011, 3121, 3160, EIE3280, 4005, 4512, ERG4001, FIN3380, MAT3007 or 3007H, 3220, PHY1002, STA3005, 4001 or 4001H	9
Total:	70
Notes:	
[a] All CSC courses in School Package, all Major Required and Major Elective courses will be included in the calculation of Major GPA for honours classification.	
[b] Students can choose to take either CSC1001 and CSC1002 or CSC1003 and CSC1004 to fulfill the graduation requirement.	
[c] Streams of Specialization	
There is one stream of specialization: Artificial Intelligence Stream. Students may choose to specialize in the stream by selecting no less than four courses from the following list: CSC3160, CSC3180, CSC4008, CSC4100, DDA4210, DDA4220, DDA4230, ECE3060, ECE4011, ECE4513, MAT3007 or 3007H	

Students may declare the stream at their expected graduation term. They may also decide not to declare any Stream, in which case they will not be subject to the Stream requirements.

(Study Scheme - Chinese)

課程名稱 計算機科學與技術	
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 70 學分：	
	學分
1. 學院課程： BIO1008, CSC1003, 1004 ^[b] , DDA2001, MAT1001 or 1011, 1002 or 1012, 2041 or 2041A, PHY1001, STA2001 or 2001H	25
2. 必修科目： CSC3001, 3060, 3200, 3150, 4120 or 4120H, DDA3020 or 3020H	20
3. 選修科目： 從以下科目中選修25學分，其中(a)項的科目修讀不少於16學分	
(a) CSC2003, 3002, 3102, 3120, 3160, 3170, 3180, 3185, 4001,4005, 4008, 4010, 4012, 4100, 4130, 4140, 4150, 4160, 4180, 4190, 4303, DDA4080, 4210, 4220, 4230, ECE3080, 4016	16
(b) BIM3001, DDA3003, 3005, 4002, 4240, 4260, 4310, ECE3060, 3200, 4011, 4310, 4513, ECO3011, 3121, 3160, EIE3280, 4005, 4512, ERG4001, FIN3380, MAT3007 or 3007H, 3220, PHY1002, STA3005, 4001 or 4001H	9
共:	70
註：	
[a] 所有CSC學院課程、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。	
[b] 學生可以修讀CSC1001, CSC1002或CSC1003, CSC1004以滿足畢業要求。	
[c] 專修範疇 本課程提供一項專修範疇供學生修讀：人工智能。學生可選擇一個範疇，修讀指定科目。學生選修此專修範疇須修讀至少四門以下選修科目： CSC3160, CSC3180, CSC4008, CSC4100, DDA4210, DDA4220, DDA4230, ECE3060, ECE4011, ECE4513, MAT3007 or 3007H	

方向申報將於學生預計畢業學期進行。學生也可以不選擇專業範疇（如未選擇範疇，則不受特定範疇修課要求的限制）。

(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.

Major Programme Requirement of <u>Computer Science and Engineering</u>		
	Recommended Course Pattern	Units
First Year of Attendance	1 st term School Package: BIO1008, CSC1003, MAT1001 or 1011	9
	2 nd term School Package: CSC1004, DDA2001, MAT1002 or 1012, 2041 or 2041A	10
Second Year of Attendance	1 st term School Package: PHY1001 Major Required: CSC3001, 3200	3 7
	2 nd term School Package: STA2001 or 2001H Major Required: CSC3060 Major Elective(s): Any one elective course	3 4 2-3
Third Year of Attendance	1 st term Major Required: CSC3150, 4120 or 4120H Major Elective(s): Any one elective course	6 2-3
	2 nd term Major Required: DDA3020 or 3020H Major Elective(s): Any two elective courses	3 5-6
Fourth Year of Attendance	1 st term Major Elective(s): Any three elective courses	8-9
	2 nd term Major Elective(s): Any two elective courses	5-6
Total (Major Requirement including School Package):		70

(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課推介。

計算機科學與技術主修課程要求		
	修課推介	學分
第一修業學年	第一學期 學院課程: BIO1008, CSC1003, MAT1001 or 1011	9
	第二學期 學院課程: CSC1004, DDA2001, MAT1002 or 1012, 2041 or 2041A	10
第二修業學年	第一學期 學院課程: PHY1001 主修必修科目: CSC3001, 3200	3 7
	第二學期 學院課程: STA2001 or STA2001H 主修必修科目: CSC3060 主修選修科目: 任何一科選修科目	3 4 2-3
第三修業學年	第一學期 主修必修科目: CSC3150, 4120 or 4120H 主修選修科目: 任何一科選修科目	6 2-3
	第二學期 主修必修科目: DDA3020 or 3020H 主修選修科目: 任何兩科選修科目	3 5-6
第四修業學年	第一學期 主修選修科目: 任何叁科選修科目	8-9
	第二學期 主修選修科目: 任何兩科選修科目	5-6
合共 (主修要求包括學院課程):		70

Course List

I. School Package for the School of Data Science

Course Code		Course Title (English)	Course Title (Chinese)	Unit(s)
BIO1008		Chemistry and Life Sciences	化學與生命科學	3
Option A	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 B	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
DDA2001		Introduction to Data Science	數據科學基礎	3
MAT1001		Calculus I	微積分（一）	3
MAT1002		Calculus II	微積分（二）	3
MAT1011		Honours Calculus I	微積分榮譽課程（一）	3
MAT1012		Honours Calculus II	微積分榮譽課程（二）	3
MAT2041		Linear Algebra and Applications	線性代數與應用	3
MAT2041A		Foundations of Linear Algebra and Applications	線性代數與應用基礎	3
PHY1001		Mechanics	力學	3
Option C	STA2001	Probability and Statistics I	概率及統計（一）	3
Option D	STA2001H	Honours Probability and Statistics I	概率及統計榮譽課程（一）	3

Remark: Students can choose to take either Option A or Option B, Option C or Option D to fulfill the graduate requirement.

II. Major Required Courses

Course Code	Course Title (English)	Course Title (Chinese)	Unit(s)
CSC3001	Discrete Mathematics	離散數學	3
CSC3060	Introduction to Computer Systems	計算機系統導論	4
CSC3200	Data Structures and Advanced Programming	數據結構與高級程序設計	4
CSC3150	Operating System	操作系統	3
CSC4120	Design and Analysis of Algorithms	算法設計及分析	3
CSC4120H	Honours Design and Analysis of Algorithms	算法設計及分析榮譽課程	3
DDA3020	Machine Learning	機器學習	3
DDA3020H	Honours Machine Learning	機器學習榮譽課程	3

III. Major Elective Courses

Course Code	Course Title (English)	Course Title (Chinese)	Unit(s)
BIM3001	Bioinformatics	生物信息學	3
CSC2003	Introduction to Java Programming	Java程序設計導論	3

CSC3002	C/C++ Programming	C/C++程序設計	3
CSC3102	Advanced Programming Laboratory	高級程序設計實驗	2
CSC3120	Principles of Programming Languages	程序設計語言原理	3
CSC3160	Fundamentals of Speech and Language Processing	語音與語言處理基礎	3
CSC3170	Database System	數據庫系統	3
CSC3180	Fundamentals of Artificial Intelligence	人工智能之基本原理	3
CSC3185	Introduction to Multimedia Systems	多媒體系統導論	3
CSC4001	Software Engineering	軟件工程	3
CSC4005	Parallel Programming	並行程序設計	3
CSC4008	Techniques for Data Mining	數據挖掘技術	3
CSC4010	Introduction to Theoretical Computer Science	理論計算機科學導論	3
CSC4012	Introduction to Quantum Computation and Quantum Information	量子計算與量子信息導論	3
CSC4100	Natural Language Processing	自然語言處理	3
CSC4130	Introduction to Human-Computer Interaction	人機接口導論	3
CSC4140	Computer Graphics	計算機圖形學	3
CSC4150	Mobile Computing with Internet of Things	物聯網移動計算	3
CSC4160	Cloud Computing	雲端計算	3
CSC4180	Compiler Construction	編譯器設計	3
CSC4190	Internet Programming and Applications	互联网编程与应用	3
CSC4303	Network Programming	網絡編程	3
DDA3003	Visual Analytics	可視化分析	3
DDA3005	Numerical Methods	數值方法	3
DDA4002	Stochastic Simulation	隨機模擬	3
DDA4080	Capstone Project	畢業設計	3
DDA4210	Advanced Machine Learning	高等機器學習	3
DDA4220	Deep Learning and Applications	深度學習與應用	3
DDA4230	Reinforcement Learning	強化學習	3
DDA4240	Data Privacy and Ethics	數據隱私和道德	3
DDA4260	Networked Life	數據科學之應用：生活中的網絡	3
DDA4310	Computational Imaging	計算成像	3
ECE3060	Introduction to Robotics	機械人學概論	3
ECE3200	Video Games Design and Development	電子遊戲設計與開發	3
ECE4011	Robotics and Intelligent Systems	機械人與智能系統	3
ECE4016	Computer Networks	計算機網絡	3
ECE4310	Programming for Robotics	機器人操作系統與編程	3
ECE4513	Image Processing and Computer Vision	圖像處理和計算機視覺	3
ECO3011	Intermediate Microeconomic Theory	中級微觀經濟理論	3
ECO3121	Introductory Econometrics	計量經濟學導論	3
ECO3160	Game Theory and Business Strategy	博弈論與商業戰略	3

ECE3080	Introduction to Embedded Systems	嵌入式系統概論	3
EIE3280	Networks: Technology, Economics and Society	网络: 技术、经济和社会	3
EIE4005	Introduction to Coding and Cryptography	編碼及密碼學導論	3
EIE4512	Digital Image Processing	數字圖像處理	3
ERG4001	Principles of Entrepreneurship	創業原則	3
FIN3380	Introduction to Financial Data Analysis	金融數據分析導論	3
MAT3007	Optimization	最優化	3
MAT3007H	Honours Optimization	最優化榮譽課程	3
MAT3220	Optimization II	最優化（二）	3
PHY1002	Physics Laboratory	物理實驗	2
STA3005	Statistical Computing	統計計算	3
STA4001	Stochastic Processes	隨機過程	3
STA4001H	Honours Stochastic Processes	隨機過程榮譽課程	3