

**(Study Scheme - English)**

<b>Programme Title</b> Statistics	
<b>Study Scheme</b>  <p style="text-align: center;"><b>Applicable to students admitted in 2020-21</b></p> <b>Major Programme Requirement</b>  Studies in Statistics are divided into TWO main streams and students are required to specialize in one of the streams:  (1) Statistical Science; (2) Financial Statistics  <b>Statistical Science Stream</b>  Students are required to complete a minimum of 70 units of courses as follows:	
	Units
1. School Package: BIO1001, CHM1001, CSC1001, 1002, MAT1001, 1002, 2040, PHY1001, STA2001	25
2. Required Courses: DDA3005, MAT2006, 2007, 3007, STA2002, 3001, 3002, 3005, 3020, 3100, 4050	33
3. Elective Courses: Any four courses selected from the following: DDA4010, 4210, 4220, 4230, 4240, 4250, 4260, MAT3006, 3220, 3280, STA4001, 4002, 4003, 4010, 4011, 4020	12
<b>Total:</b>	<b>70</b>
<b>Financial Statistics Stream</b>  Students are required to complete a minimum of 70 units of courses as follows:	
	Units
1. School Package: BIO1001, CHM1001, CSC1001, 1002, MAT1001, 1002, 2040, PHY1001, STA2001	25

2. Required Courses:	
DDA3005, MAT2006, 2007, 3007, STA2002, 3001, 3002, 3005, 3020, 3100, 4050	33
3. Elective Courses:	
Any four courses selected from the following: ECO3121, 3160, FIN3080, FMA4200, 4800, STA4001, 4002, 4003, 4010, 4011, 4020	12
<b>Total:</b>	<b>70</b>

Notes:

- [a] All required and elective courses will be included in the calculation of Major GPA for honours classification.

(Study Scheme - Chinese)

課程名稱 統計學	
修讀辦法  二〇二〇至二一年度入學學生適用	
主修課程要求  本課程分設兩項專修範圍，學生須選修其中一項專修範圍：	
(1) 統計科學； (2) 金融統計。	
統計科學專修範圍  學生須至少修畢以下科目共 70 學分：	
	學分
1. 學院課程： BIO1001, CHM1001, CSC1001, 1002, MAT1001, 1002, 2040, PHY1001, STA2001	25
2. 必修科目： DDA3005, MAT2006, 2007, 3007, STA2002, 3001, 3002, 3005, 3020, 3100, 4050	33
3. 選修科目： 從以下選修四科： DDA4010, 4210, 4220, 4230, 4240, 4250, 4260, MAT3006, 3220, 3280, STA4001, 4002, 4003, 4010, 4011, 4020	12
共：	<b>70</b>
金融統計專修範圍  學生須至少修畢以下科目共 70 學分：	
	學分
1. 學院課程： BIO1001, CHM1001, CSC1001, 1002, MAT1001, 1002, 2040, PHY1001, STA2001	25

2. 必修科目：	
DDA3005, MAT2006, 2007, 3007, STA2002, 3001, 3002, 3005, 3020, 3100, 4050	33
3. 選修科目：	
從以下選修四科：	12
ECO3121, 3160, FIN3080, FMA4200, 4800, STA4001, 4002, 4003, 4010, 4011, 4020	
<b>共：</b>	<b>70</b>

註：

[a] 所有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。

(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.

<b>Major Programme Requirement of <u>Statistics</u></b>		
	<b>Recommended Course Pattern</b>	<b>Units</b>
<b>First Year of Attendance</b>	1 <sup>st</sup> term School Package: CHM1001, MAT1001, PHY1001	9
	2 <sup>nd</sup> term School Package: CSC1001, 1002, MAT1002, STA2001	10
<b>Second Year of Attendance</b>	1 <sup>st</sup> term School Package: MAT2040 Major Required: MAT2006, STA2002	3 6
	2 <sup>nd</sup> term School Package: BIO1001 Major Required: MAT2007, 3007	3 6
<b>Third Year of Attendance</b>	1 <sup>st</sup> term Major Required: DDA3005, STA3001, 3020	9
	2 <sup>nd</sup> term Major Required: STA3002, 3005, 3100	9
<b>Fourth Year of Attendance</b>	1 <sup>st</sup> term Major Elective(s): three courses	9
	2 <sup>nd</sup> term Major Required: STA4050 Major Elective(s): one course	3 3
<b>Total (Major Requirement including School Package):</b>		<b>70</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課推介。

<u>統計學主修課程要求</u>		
	修課推介	學分
第一修業學年	第一學期 學院課程: CHM1001, MAT1001, PHY1001	9
	第二學期 學院課程: CSC1001, 1002, MAT1002, STA2001	10
第二修業學年	第一學期 學院課程: MAT2040 主修必修科目: MAT2006, STA2002	3 6
	第二學期 學院課程: BIO1001 主修必修科目: MAT2007, 3007	3 6
第三修業學年	第一學期 主修必修科目: DDA3005, STA3001, 3020	9
	第二學期 主修必修科目: STA3002, 3005, 3100	9
第四修業學年	第一學期 主修選修科目: 三科	9
	第二學期 主修必修科目: STA4050 主修選修科目: 一科	3 3
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)
BIO1001	General Biology	普通生物	3
CHM1001	General Chemistry	普通化學	3
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
MAT1001	Calculus I	微積分（一）	3
MAT1002	Calculus II	微積分（二）	3
MAT2040	Linear Algebra	線性代數	3
PHY1001	Mechanics	力學	3
STA2001	Probability and Statistics I	概率及統計（一）	3

### II. Major Required Courses

Course Code	Course Title (English)	Course Title (Chinese)	Unit(s)
DDA3005	Numerical Methods	數值方法	3
MAT2006	Elementary Real Analysis	基礎實分析	3
MAT2007	Elementary Real Analysis II	基礎實分析（二）	3
MAT3007	Optimization	最優化	3
STA2002	Probability and Statistics II	概率及統計（二）	3
STA3001	Linear Models	線性模型	3
STA3002	Generalized Linear Models	廣義線性模型	3
STA3005	Statistical Computing	統計計算	3
STA3020	Statistical Inference	統計推斷	3
STA3100	Statistical Inference II	統計推斷（二）	3
STA4050	Statistical Capstone	統計畢業設計	3

### III. Major Elective Courses

Course Code	Course Title (English)	Course Title (Chinese)	Unit(s)
DDA4010	Bayesian Statistics	貝葉斯統計	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
DDA4250	Mathematical Introduction to Deep Learning	深度學習中的數學	3
DDA4260	Networked Life	數據科學之應用：生活中的網絡	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
FIN3080	Investment Analysis and Portfolio Management	投資分析與投資組合管理	3
FMA4200	Financial Data Analysis	金融資料分析	3
FMA4800	Financial Computation	金融計算	3
MAT3006	Real Analysis	實分析	3
MAT3220	Optimization II	最優化（二）	3
MAT3280	Probability Theory	概率論	3
STA4001	Stochastic Processes	隨機過程	3
STA4002	Multivariate Techniques with Business Applications	多元技術及其商業應用	3
STA4003	Time Series	時間序列	3
STA4010	Selected Topics in Statistics I	統計學專題（一）	3
STA4011	Selected Topics in Statistics II	統計學專題（二）	3
STA4020	Statistical Modelling in Financial Markets	金融市場的統計建模	3