

(Study Scheme - English)

<b>Programme Title</b> Statistics	
<b>Study Scheme</b>  <p style="text-align: center;"><b>Applicable to students admitted in 2018-19</b></p> <b>Major Programme Requirement</b>  Studies in Statistics are divided into THREE main streams and students are required to specialize in one of the streams: (1) Statistical Science; (2) Data Science; and (3) Financial Statistics  <b>Statistical Science Stream</b>  Students are required to complete a minimum of 72 units of courses as follows:	
1. School Package: BIO2001, CHM1001, CSC1001, 1002, MAT1001/1003, 1002/1004, 2040, PHY1001, STA2001	Units 25
2. Required Courses: ERG2050, STA2002, 3007, 3010, 3020, 3050, 4001, 4002, 4003, 4030	29
3. Elective Courses:	
(a) Four courses selected from the following: BME4005, MAT3007, 3280, STA3006, 3011, 3030, 3100, 4005, 4007, 4010, 4011, 4014, 4020	12
(b) Two courses selected from the following: ACT4253, CSC4005, 4008, 4020, ECO2011, ERG3010, FIN2010, MKT2010, RMS4001, 4050	6
<b>Total:</b>	<b>72</b>
 <b>Data Science Stream</b>  Students are required to complete a minimum of 72 units of courses as follows:	
1. School Package: BIO2001, CHM1001, CSC1001, 1002, MAT1001/1003, 1002/1004, 2040, PHY1001, STA2001	Units 25

2.	Required Courses: CSC3001, 3002, 4008, ERG2050, 3010, STA2002, 3010, 3020, 3050, 4030	29
3.	Elective Courses:	
(a)	Four courses selected from the following: CSC4005, 4020, EIE3050, ERG3020, MAT3280, STA3006, 3007, 3011, 3100, 3030, 4001, 4003, 4005, 4007, 4010, 4011, 4014	12
(b)	Two courses selected from the following: ACT4253, BGE4010, BME4005, ECO2011, FIN2010, MAT3007, MKT2010, RMS4001, 4050, STA4020	6
<b>Total:</b>		<b>72</b>
<b>Financial Statistics Stream</b>		
Students are required to complete a minimum of 72 units of courses as follows:		
		Units
1.	School Package: BIO2001, CHM1001, CSC1001, 1002, MAT1001/1003, 1002/1004, 2040, PHY1001, STA2001	25
2.	Required Courses: ECO2011, 3121, ERG2050, FIN2010, 3080, STA2002, 3020, 3050, 4003, 4020	29
3.	Elective Courses:	
(a)	Four courses selected from the following: CSC4008, 4020, MAT3007, 3280, RMS4001, 4050, 4060, STA3006, 3007, 3010, 3011, 3030, 3100, 4001, 4005, 4010, 4011, 4014	12
(b)	Two courses selected from the following: ACT2111, 4253, BGE4010, CSC4005, ECO2021, 3011, 3410, ERG 3010, 3020, MKT2010, FIN4060	6
<b>Total:</b>		<b>72</b>
Notes:		
[1]	All required and elective courses, excluding IEG3050 and MAT3010 will be included in the calculation of Major GPA for honours classification.	

(Study Scheme - Chinese)

<b>課程名稱</b> 統計學	
<b>修讀辦法</b>  二〇一八至一九年度入學學生適用	
<b>主修課程要求</b>  本課程分設三項專修範圍，學生須選修其中一項專修範圍： (1) 統計科學； (2) 數據科學；及 (3) 金融統計。	
<b>統計科學專修範圍</b> 學生須至少修畢以下科目共 72 學分：	
1. 學院課程： BIO2001, CHM1001, CSC1001, 1002, MAT1001/1003, 1002/1004, 2040, PHY1001, STA2001	學分 25
2. 必修科目： ERG2050, STA2002, 3007, 3010, 3020, 3050, 4001, 4002, 4003, 4030	29
3. 選修科目：	
(a) 從以下選修其中四科： BME4005, MAT3007, 3280, STA3006, 3011, 3030, 3100, 4005, 4007, 4010, 4011, 4014, 4020	12
(b) 從以下選修其中兩科： ACT4253, CSC4005, 4008, 4020, ECO2011, ERG3010, FIN2010, MKT2010, RMS4001, 4050	6
<b>共：</b>	<b>72</b>
<b>數據科學專修範圍</b> 學生須至少修畢以下科目共 72 學分：	
1. 學院課程： BIO2001, CHM1001, CSC1001, 1002, MAT1001/1003, 1002/1004, 2040, PHY1001, STA2001	學分 25
2. 必修科目：	29

CSC3001, 3002, 4008, ERG2050, 3010, STA2002, 3010, 3020, 3050, 4030

3. 選修科目：

(a) 從以下選修其中四科：

CSC4005, 4020, EIE3050, ERG3020, MAT3280, STA3006, 3007, 3011, 3100, 3030, 4001, 4003, 4005, 4007, 4010, 4011, 4014 12

(b) 從以下選修其中兩科：

ACT4253, BGE4010, BME4005, ECO2011, FIN2010, MAT3007, MKT2010, RMS4001, 4050, STA4020 6

共: 72

### 金融統計專修範圍

學生須至少修畢以下科目共 72 學分：

學分

1. 學院課程：

BIO2001, CHM1001, CSC1001, 1002, MAT1001/1003, 1002/1004, 2040, PHY1001, STA2001 25

2. 必修科目：

ECO2011, 3121, ERG2050, FIN2010, 3080, STA2002, 3020, 3050, 4003, 4020 29

3. 選修科目：

(a) 從以下選修其中四科：

CSC4008, 4020, MAT3007, 3280, RMS4001, 4050, 4060, STA3006, 3007, 3010, 3011, 3030, 3100, 4001, 4005, 4010, 4011, 4014 12

(b) 從以下選修其中兩科：

ACT2111, 4253, BGE4010, CSC4005, ECO2021, 3011, 3410, ERG3010, 3020, MKT2010, FIN4060 6

共: 72

注：

[1] 除IEG3050和MAT3010外，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

- 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>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, MAT1001/1003, PHY1001	9
	2 <sup>nd</sup> term School Package: CSC1001, 1002, MAT1002/1004, STA2001	10
<b>Second Year of Attendance</b>	1 <sup>st</sup> term School Package: MAT2040 Major Required: ECO2011 <sup>[3]</sup> , STA2002, 3050	3 5-8
	2 <sup>nd</sup> term School Package: BIO2001 Major Required: FIN2010 <sup>[3]</sup> , STA3010 <sup>[1][2]</sup> , 3020 <sup>[1][2]</sup> Major Elective(s): one course	3 3-6 3
<b>Third Year of Attendance</b>	1 <sup>st</sup> term Major Required: CSC3001 <sup>[2]</sup> , ECO3121 <sup>[3]</sup> , ERG2050, 3010 <sup>[2]</sup> , STA3007 <sup>[1]</sup> , 3020 <sup>[3]</sup> , 4030 <sup>[1]</sup> Major Elective(s): one course	9 3
	2 <sup>nd</sup> term Major Required: CSC3002 <sup>[2]</sup> , 4008 <sup>[2]</sup> , FIN3080 <sup>[3]</sup> , STA4002 <sup>[1]</sup> , 4003 <sup>[1][3]</sup> Major Elective(s): one course	6 3
<b>Fourth Year of Attendance</b>	1 <sup>st</sup> term Major Required: STA4001 <sup>[1]</sup> , 4020 <sup>[3]</sup> , 4030 <sup>[2]</sup> Major Elective(s): one course	3 3
	2 <sup>nd</sup> term Major Elective(s): two courses	6
<b>Total (Major Requirement including School Package):</b>		<b>72</b>

## Explanatory Notes:

[1] Applicable to Statistical Science Stream only.

[2] Applicable to Data Science Stream only.

[3] Applicable to Financial Statistics Stream only.

## (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) 資訊科技一學分；(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。

統計學主修課程要求		
	修課推介	學分
第一修業學年	第一學期 學院課程: CHM1001, MAT1001/1003, PHY1001	9
	第二學期 學院課程: CSC1001, 1002, MAT1002/1004, STA2001	10
第二修業學年	第一學期 學院課程: MAT2040 主修必修科目: ECO2011 <sup>[3]</sup> , STA2002, 3050	3 5-8
	第二學期 學院課程: BIO2001 主修必修科目: FIN2010 <sup>[3]</sup> , STA 3010 <sup>[1][2]</sup> , 3020 <sup>[1][2]</sup> 主修選修科目: 一科	3 3-6 3
第三修業學年	第一學期 主修必修科目: CSC3001 <sup>[2]</sup> , ECO3121 <sup>[3]</sup> , ERG2050, 3010 <sup>[2]</sup> , STA3007 <sup>[1]</sup> , 3020 <sup>[3]</sup> , 4030 <sup>[1]</sup> 主修選修科目: 一科	9 3
	第二學期 主修必修科目: CSC3002 <sup>[2]</sup> , 4008 <sup>[2]</sup> , FIN3080 <sup>[3]</sup> , STA4002 <sup>[1]</sup> , 4003 <sup>[1][3]</sup> 主修選修科目: 一科	6 3
第四修業學年	第一學期 主修必修科目: STA4001 <sup>[1]</sup> , 4020 <sup>[3]</sup> , 4030 <sup>[2]</sup> 主修選修科目: 一科	3 3
	第二學期 主修選修科目: 兩科	6
合共 (主修要求包括學院課程):		72

註：

- [1] 只用於統計科學專修範圍。
- [2] 只適用於數據科學專修範圍。
- [3] 只適用於金融統計專修範圍。

## Course List

### I. School Package for the School of Science and Engineering

Course Code	Course Title (English)	Course Title (Chinese)	Unit(s)	
BIO2001	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	
Option A*	MAT1001	Calculus I	微積分（一）	3
	MAT1002	Calculus II	微積分（二）	3
Option B*	MAT1003	Mathematical Analysis I	數學分析（一）	3
	MAT1004	Mathematical Analysis II	數學分析（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	

**\*Students must complete either Option A or Option B.**

### II. Major Required Courses

Course Code	Course Title (English)	Course Title (Chinese)	Unit(s)
CSC3001	Discrete Mathematics	離散數學	3
CSC3002	Introduction to Computer Science: Programming Paradigms	計算機科學導論：程序設計範式	3
CSC4008	Techniques for Data Mining	數據挖掘技術	3
ECO2011	Basic Microeconomics	微觀經濟學基礎	3
ECO3121	Introductory Econometrics	計量經濟學導論	3
ERG2050	Introduction to Data Analytics	數據解析導論	3
ERG3010	Data and Knowledge Management	數據與知識管理	3
FIN2010	Financial Management	財務管理	3
FIN3080	Investment Analysis and Portfolio Management	投資分析與投資組合管理	3
STA2002	Probability and Statistics II	概率及統計（二）	3
STA3007	Nonparametric Statistics	非參數統計	3
STA3010	Regression Analysis	迴歸分析	3
STA3020	Statistical Inference	統計推斷	3
STA3050	Statistical Software	統計軟件	2
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
STA4020	Statistical Modelling in Financial Markets	金融市場的統計建模	3
STA4030	Categorical Data Analysis	範疇性數據分析	3

### III. Major Elective Courses

Course Code	Course Title (English)	Course Title (Chinese)	Unit(s)
ACT2111	Introductory Financial Accounting	財務會計導論	3
ACT4253	Legal Environment, Business Ethics and CSR in China	中國法律環境、商業道德與企業社會責任	3
BGE4010	Into-the-Future: Science, Technology, Humanities and Business	展望：科技、人文與商業	3
BME4005	Bioinformatics	生物信息學	3
CSC4005	Distributed and Parallel Computing	分佈式及並行式計算	3
CSC4008	Techniques for Data Mining	數據挖掘技術	3
CSC4020	Fundamentals of Machine Learning	機器學習之基礎課程	3
ECO2011	Basic Microeconomics	微觀經濟學基礎	3
ECO2021	Basic Macroeconomics	宏觀經濟學基礎	3
ECO3011	Intermediate Microeconomic Theory	中級微觀經濟學	3
ECO3410	Economics of Money and Financial Institutions	貨幣與金融機構經濟學	3
EIE3050	Principles of Communication Systems	通信系統原理	3
ERG3010	Data and Knowledge Management	數據與知識管理	3
ERG3020	Web Analytics and Intelligence	網絡分析與智能	3
FIN2010	Financial Management	財務管理	3
FIN4060	Financial Markets in China and the World	中國與世界的金融市場	3
IEG3050	Principles of Communication Systems	通信系統原理	3
MKT2010	Marketing Management	市場管理	3
RMS4001	Simulation Methods for Risk Management and Finance	金融及風險管理模擬方法	3
RMS4050	Stochastic Calculus for Finance and Risk	金融與風險之隨機微積分	3
RMS4060	Risk Management with Derivatives	風險管理及衍生工具	3
MAT3007	Optimization	最優化	3
MAT3280	Probability Theory	概率論	3
STA3006	Design and Analysis of Experiments	實驗設計與分析	3
STA3007	Nonparametric Statistics	非參數統計	3
STA3010	Regression Analysis	迴歸分析	3
STA3011	Applied Regression Analysis	應用迴歸分析	3
STA3030	Survey Sampling	調查抽樣	3
STA3100	Advanced Statistics	高等統計	3
STA4001	Stochastic Processes	隨機過程	3



STA4003	Time Series	時間序列	3
STA4005	Survival Modelling	生存數據模型	3
STA4007	Statistical Quality Control	統計品質控制	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
STA4014	Statistical Methods for Online Testing Procedures	在線实时檢驗的統計方法	3
STA4020	Statistical Modelling in Financial Markets	金融市場的統計建模	3

\* The Chinese course title of ERG2050 is 數據分析導論 for students who study the courses in 2015, 2016, 2017 and 2018. For students who study ERG2050 from 2019-20 term 1, the Chinese course title is 數據解析導論. 在 2015, 2016, 2017及2018 學年修讀 ERG2050, 科目名稱爲「數據分析導論」。在 2019 學年第一学期及以後 修讀 ERG2050, 科目名稱爲「數據解析導論」。