

## 110 學年度學士班課程規劃表 Curriculum - BS Program, 110th Academic Year

理工學院 數學學系 資訊數學組

Information Mathematics Section, Department of Mathematics, College of Science and Engineering

備註(Note)：

1. 此為課程規劃表，實際開課課程以教務處公告為準。

This is the course planning table; the actual courses offered are subject to the announcements from the Office of Academic Affairs.

2. 修業規則另有學分規定。

There are other credit regulations in the graduation regulation.

## 必修課程 Major Required Courses

年級 Year	課程名稱 Course Title	第一學期 1st semester.	第二學期 2nd semester.	學分 Credits
一年級 Freshman	微積分(一) Calculus(I)	4	-	53學分 53 credits
	微積分(二) Calculus(II)	-	4	
	線性代數(一) Linear Algebra(I)	3	-	
	線性代數(二) Linear Algebra (II)	-	3	
	程式設計(一) Computer Programming(I)	3	-	
	數學導論 Introduction to Mathematics	2	2	
二年級 Sophomore	高等微積分(一) Advanced Calculus (I)	4	-	
	高等微積分(二) Advanced Calculus(II)	-	4	
	機率論 Probability Theory	3	-	
	統計學 Statistics	-	3	
	離散數學 Discrete Mathematics	3	-	
	代數學(一) Algebra (I)	3	-	
	資料結構 Data Structures	-	3	
三年級 Junior	科學計算 Scientific Computing	3	-	
	演算法 Algorithms	3	-	
	人工智慧概論 Introduction of Artificial Intelligence	-	3	
四年級 Senior	-	-	-	

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## 必選課程 Elective Courses by Section

年級 Year	課程名稱 Course Title	第一學期 1st semester.	第二學期 2nd semester.	學分 credits
一年級 Freshman	程式設計(二) Computer Programming II	-	3	系專業科目至少需選修15學分。 15 credits must be chosen from elective courses at section.
	行動裝置程式設計 Mobile Device Programming	-	3	
二年級 Sophomore	資料庫 Database Concepts	3	-	
	網路概論 Introduction to Computer Networks	3	-	
	作業系統 Operating System	-	3	
	微分方程 Differential Equations	2	2	
	代數學(二) Algebra (II)	-	3	
三年級 Junior	複變函數論 Complex Analysis	2	2	
	密碼學 Cryptography	3	-	
	形式語言 Formal Language	3	-	
	圖論 Graph Theory	3	-	
	圖論演算法 Graph Algorithms	-	3	
	資訊數學專題(一) Topics in Information Mathematics (I)	2	-	
	資訊數學專題(二) Topics in Information Mathematics (II)	-	2	
四年級 Senior	-	-	-	

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## 選修課程 Elective Courses

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年級 Year	課程名稱 Course Title	第一學期 1st semester.	第二學期 2nd semester.	學分 credits
一年級 Freshman	數學物理入門(一) Introduction to Mathematical Physics (I)	2	-	本系專業選修課程至少10學分，包含4學分以英語授課之專業課程。 At least 10 credits of elective courses from this department must be taken, including 4 credits of courses taught in English.
	數學物理入門(二) Introduction to Mathematical Physics (II)	-	2	
	數學物理入門(三) Introduction to Mathematical Physics (I)	2	-	
	數學物理入門(四) Introduction to Mathematical Physics (IV)	-	2	
	數學英文 English for Mathematics	2	-	
	微積分專題 Calculus Projects	-	2	
	C語言 C Language	-	3	
	Java程式語言 JAVA Programming Language	3	-	
	數學軟體 Introduction to Mathematical Software	-	3	
	分析專題 Topics in Analysis	2	-	
二年級 Sophomore	向量微積分 Vector Calculus	-	2	
	拓樸專題 Topics in Topology	2	2	
	動態網頁設計 Dynamic Web Design	-	3	
	C#物件導向程式設計 C# Object Oriented Programming	3	-	
	ASP.NET入門 Introduction to ASP.NET	-	3	
	計算機組織 Computer Organization	3	-	
	商用數學 Compound Interest	3	-	
	精算數學 Actuarial Mathematics	-	3	
	財產保險商品 Non-life Insurance Products	3	-	
	人壽保險商品 Life Insurance Products	-	3	

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三年級 Junior	數學永續專題 Topics on Mathematical Sustainability	-	2	
	機器學習與應用 Machine Learning and Its Applications	3	-	
	深度學習與實務 Deep Learning and Practice	-	3	
	最佳化理論及應用 Optimization Theory and Applications	3	-	
	深度學習 Deep Learning	-	3	
	數論 Number theory	2	2	
	數理統計 Mathematical Statistics	3	3	
	多變量分析 Multivariate Statistical Analysis	-	3	
	隨機過程 Stochastic Process	3	-	
	偏微分方程導論 Introduction to Partial Differential Equations	-	3	
	幾何學 Geometry	3	-	
	應用數學專題(一) Topics in Applied Mathematics (I)	2	-	
	應用數學專題(二) Topics in Applied Mathematics (II)	-	2	
四年級 Senior	財務數學 Financial Mathematics	3	3	
	產險精算數學 Property and Casualty Actuarial Mathematics	3	-	
	產險精算實務 Property and Casualty Actuarial Practice	-	3	
	論文研討(一) Colloquium(I)	1	-	
	論文研討(二) Colloquium(II)	-	1	