

應用數學學系 跨域模組課程 必修科目表(B)

The Required Course List (B) in cross-disciplinary module curriculum of Applied Mathematics for the students of other departments

類別 Category	科目名稱 Course Name	學分 Credit	開課系所 Department	備註 Remark
基礎學科 Basic Course	向量微積分 Vector Calculus	2	應用數學系 Department of Applied Mathematics	至少 28 學分 At least 28 Credits should be completed
	微分方程 Differential Equations	3		
	偏微分方程導論 Introduction to Partial Differential Equations	3		
	機率論 Probability Theory	3		
	代數學 (一) Algebra(I)	3		
	離散數學 Discrete Mathematics	3		
	計算數學 Computational Mathematics	3		
	統計學 Statistics	3		
	複變函數論 Complex Analysis	3		
進階選修 Advanced Course	分析導論 (一) (高等微積分(一)) Introduction to Analysis (I) (Advanced Calculus (I))	4	應用數學系 Department of Applied Mathematics	至少 28 學分 At least 28 Credits should be completed
	分析導論 (二) (高等微積分(二)) Introduction to Analysis (II) (Advanced Calculus (II))	4		
	實分析導論 Introduction to Real Analysis	3		
	拓撲學 Topology	3		
	幾何學 Geometry	3		
	動態系統導論 Introduction to Dynamic Systems	3		
	代數學 (二) Algebra(II)	3		
	基礎數論 Basic Number Theory	3		
	機率建模 Probability Modeling	3		
	隨機過程 Stochastic Process	3		

	高等機率論(一) Advanced Probability (I)	3		
	資料結構與圖論演算法 Data structure and Graph Algorithms	3		
	基礎圖論 Basic Graph Theory	3		
	圖論 Graph Theory	3		
	編碼理論 Coding Theory	3		
	密碼學 Cryptography	3		
	主題式數學建模與計算(一) Topical Mathematical Modeling and Computing(I)	3		
	應用數學方法 Applied Mathematics Methods	3		
	科學計算導論 Introduction to Scientific Computing	3		
	大型矩陣計算 Large Sparse Matrix Computations	3		
	最佳化理論方法及應用 Optimization: Theory, Algorithms and Applications	3		
	數值偏微分方程 Numerical Partial Differential Equations	3		
	機器學習 Machine Learning	3		
	專題研究 Directed Individual Study	3	專題研究(一)~(四) 至多採計 3 學分 Directed Individual Study (1) (2) (3) (4) At most three credits from Directed Individual Study courses	