

# 東吳大學 理學院 數學系學士班必選修科目表

Department of Mathematics, School of Science, Soochow University  
Undergraduates Curriculum

(適用 113 年度一年級入學新生)  
(For 2024 FALL INCOMING STUDENTS)

科 目 名 稱 Course Titles			Required / Elective 選 別	學 分 Credits	學 年 Academic Year								備 註 Remark	
					第一學年 First Year		第二學年 Second Year		第三學年 Third Year		第四學年 Fourth Year			
					上 Fall	下 Spring	上 Fall	下 Spring	上 Fall	下 Spring	上 Fall	下 Spring		
Common Required Courses 校訂共同必修	國 文 CHINESE		必 Required	4	2	2								
	外 文 (英、日、德、韓文) FOREIGN LANGUAGE (ENGLISH、JAPANESE、 GERMAN、KOREAN)	外文(一)	必 Required	8	2	2								詳附註 1 說明。 Please refer to Note 1 for details.
		外文(二)					2	2						
	生命關懷 LIFE CONCERNS		必 Required	1	0	1								各學系依「共通科目各 領域開設時段表」分別 安排於上或下學期修 讀。 The “Common and General Required Courses Offering Schedule” serves as the basis for all departments to offer courses by semester.
	思維方法 PRINCIPLES OF REASONING		必 Required	1	0	1								
	職涯錨定 CAREER ANCHOR		必 Required	1					0	1				
	人工智慧跨域應用 MULTIDISCIPLINARY TRENDS IN ARTIFICIAL INTELLIGENCE		必 Required	1					0	1				
	數位自主學習 INDEPENDENT ONLINE LEARNING		必 Required	2	修業期限內配合選課時間由學生自主選課修讀 Students can choose courses based on the course schedule within the permitted study years.									
	通識課程 GENERAL EDUCATION COURSES		必 Required	10	2	2	2	2	2					
體 育 PHYSICAL EDUCATION		必 Required	0	0	0	0	0							
Graduation Requirements 畢業標準	外文能力 FOREIGN LANGUAGE PROFICIENCY		必 Required	0	學生最遲在延長修業年限內必須通過「外文」和「資訊」等兩項 畢業標準能力檢核，未通過者不得畢業。 Students must meet the graduation requirements of “FOREIGN LANGUAGE PROFICIENCY” and “INFORMATION COMPETENCE” within the extended years of study. Failure to meet these requirements will prevent them from graduating.									
	資訊能力 INFORMATION COMPETENCE		必 Required	0	學生最遲在延長修業年限內至少需參與校內藝文活動4場次，未通 過者不得畢業。 Students are required to attend at least four on-campus arts or cultural events within the extended years of study. Failure to meet these requirements will prevent them from graduating.									
	美育活動 AESTHETIC EDUCATION & ACTIVITIES		必 Required	0										
Departmental Required Courses 系必修	普通物理 GENERAL PHYSICS		必 Required	6	3	3								含輔導(2 小時) Including practice (2 hours)
	微積分 CALCULUS		必 Required	8	4	4								含輔導(2 小時) Including practice (2 hours)
	線性代數 LINEAR ALGEBRA		必 Required	6	3	3								含輔導(2 小時) Including practice (2 hours)
	數學概論 INTRODUCTION TO FUNDAMENTAL MATHEMATICS		必 Required	2	2	0								含輔導(1 小時) Including practice (1 hours)

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Departmental Required Courses 系必修	計算機概論 INTRODUCTION TO COMPUTER SCIENCE	必 Required	3	0	3							列抵「資訊能力」 「INFORMATION CAPACITY」Exemption 含輔導(2 小時) Including practice (2 hours)
	高等微積分(一) ADVANCED CALCULUS(I)	必 Required	4			4	0					微積分及格 Passed CALCULUS 含輔導(2 小時) Including practice (2 hours)
	高等微積分(二) ADVANCED CALCULUS(II)	必 Required	4			0	4					高等微積分(一)50 分以上 ADVANCED CALCULUS(I) 50 points or above 含輔導(2 小時) Including practice (2 hours)
	微分方程 DIFFERENTIAL EQUATIONS	必 Required	4			0	4					含輔導(2 小時) Including practice (2 hours)
	機率概論 INTRODUCTION TO PROBABILITY	必 Required	3			3	0					含輔導(2 小時) Including practice (2 hours)
	統計概論 INTRODUCTION TO STATISTICS	必 Required	3			0	3					含輔導(2 小時) Including practice (2 hours)
	代數學(一) INTRODUCTION TO ABSTRACT ALGEBRA (I)	必 Required	3			3	0					含輔導(2 小時) Including practice (2 hours)
	代數學(二) INTRODUCTION TO ABSTRACT ALGEBRA (II)	必 Required	3			0	3					代數學(一)50 分以上 含輔導(2 小時) Including practice (2 hours)
	幾何學 DIFFERENTIAL GEOMETRY	必 Required	4					4	0			含輔導(2 小時) Including practice (2 hours)
	複變函數論 INTRODUCTION TO COMPLEX ANALYSIS	必 Required	4					0	4			含輔導(2 小時) Including practice (2 hours)
Department Elective Courses 系選修	數學思通 SENIOR EXHIBITION	選 Elective	2							1	1	總結性課程 capstone course
	普通物理實驗 GENERAL PHYSICS LABORATORY	選 Elective	2	1	1							每週上課 3 小時
	向量分析 VECTOR ANALYSIS	選 Elective	3			3	0					含輔導(1 小時) Including practice (1 hours)
	數學軟體 MATHEMATICS SOFTWARES	選 Elective	3			3	0					
	基礎數論 ELEMENTARY NUMBER THEORY	選 Elective	3			0	3					
	程式語言 PROGRAMMING	選 Elective	3			0	3					

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Department Elective Courses 系選修	拓樸導論 INTRODUCTION TO TOPOLOGY	選 Elective	3					3	0			
	密碼學概論 INTRODUCTION TO RYPTOGRAPHY	選 Elective	3					3	0			
	組合學 COMBINATORIAL MATHEMATICS	選 Elective	3					3	0			
	數值分析 NUMERICAL ANALYSIS	選 Elective	4					4	0			
	電腦繪圖 COMPUTER GRAPHICS	選 Elective	3					3	0			
	數理統計(一) MATHEMATICAL STATISTICS (I)	選 Elective	3					3	0			含輔導(1 小時) Including practice (1 hours)
	專題研究(一) UNDERGRADUATE RESEARCH (I)	選 Elective	1					1	0			
	代數特論 TOPICS IN ALGEBRA	選 Elective	3					3	0			代數學(二)50 分以上 INTRODUCTION TO ABSTRACT ALGEBRA (II) 50 points or above
	資料科學與 R 語言 DATA SCIENCE AND R	選 Elective	3					0	3			
	代數編碼 ALGEBRAIC CODING	選 Elective	3					0	3			
	富氏分析 FOURIER ANALYSIS	選 Elective	3					0	3			
	離散數學 DISCRETE MATHEMATICS	選 Elective	3					0	3			
	應用線性代數 APPLIED LINEAR ALGEBRA	選 Elective	3					0	3			
	組合編碼 COMBINATORIAL CODING	選 Elective	3					0	3			
	計算數學 COMPUTATIONAL MATHEMATICS	選 Elective	2					0	2			
	資料結構 DATA STRUCTURES	選 Elective	3					0	3			
	數理統計(二) MATHEMATICAL STATISTICS (II)	選 Elective	3					0	3			含輔導(1 小時) Including practice (1 hours)
	專題研究(二) UNDERGRADUATE RESEARCH (II)	選 Elective	1					0	1			
	量子計算導論 INTRODUCTION TO QUANTUM COMPUTATION	選 Elective	3					0	3			

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Department Elective Courses 系選修	數理流行病學 MATHEMATICAL EPIDEMIOLOGY	選 Elective	4							2	2	
	機器學習與應用 MACHINE LEARNING WITH APPLICATIONS	選 Elective	3							3	0	
	常微分方程式 THEORY OF ORDINARY DIFFERENTIAL EQUATIONS	選 Elective	3							0	3	
	生物數學(一) BIOLOGY MATHEMATICS(I)	選 Elective	3							3	0	
	生物統計 BIostatISTICS	選 Elective	3							3	0	
	金融模型導論 INTRODUCTION TO FINANCIAL MODELS	選 Elective	3							0	3	
	人工智慧應用實務(一) ARTIFICIAL INTELLIGENCE APPLICATIONS IN PRACTICE (I)	選 Elective	1							1	0	
	專題研究(三) UNDERGRADUATE RESEARCH (III)	選 Elective	1							1	0	
	數學建模概論(一) INTRODUCTION TO MATHEMATICAL MODELING (I)	選 Elective	2							2	0	
	數學建模概論(二) INTRODUCTION TO MATHEMATICAL MODELING (II)	選 Elective	2							0	2	
	統計計算 STATISTICAL COMPUTING	選 Elective	3							0	3	
	偏微分方程式 INTRODUCTION TO PARTIAL DIFFERENTIAL EQUATIONS	選 Elective	3							3	0	
	生物數學(二) BIOLOGY MATHEMATICS(II)	選 Elective	3							0	3	
	數值編碼 NUMERICAL CODING	選 Elective	3							0	3	
	線性規劃 LINEAR PROGRAMMING	選 Elective	3							0	3	
	實變函數論 REAL ANALYSIS	選 Elective	4							0	4	
	影像處理分析 IMAGE PROCESSING ANALYSIS	選 Elective	3							0	3	
	專題研究(四) UNDERGRADUATE RESEARCH (IV)	選 Elective	1							0	1	

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Department Elective Courses 系選修	深度學習與應用 DEEP LEARNING:FUNDAMENTALS AND APPLICATIONS	選 Elective	1							0	1	
	人工智慧應用實務(二) ARTIFICIAL INTELLIGENCE APPLICATIONS IN PRACTICE (II)	選 Elective	1							0	1	
	其他經本系核定課程 OTHER COURSES APPROVED BY THE DEPARTMENT	選 Elective										應符合數學系之選課規 定。 MUST COMPLY WITH THE COURSE SELECTION REGULATIONS OF THE DEPARTMENT OF MATHEMATICS
必 修 Required			85	18	21	14	18	6	6	0	0	數位自主學習 2 學分 AUTONOMOUS ONLINE LEARNING 2 credits
畢業學分總計 Minimum Required Credits for Graduation			43	至多承認修讀外系 16 學分。 A maximum of 16 credits from external departments will be admitted. 修讀外系科目僅限於本系未開設之科目才得以承認學分。 Credits for courses taken from external departments will be recognized only if they are not offered by the department.								
選 修 Elective												
共 計 Total			128	--	--	--	--	--	--	--	--	

附註Notes：

- 外文共開設英、日、德、韓四種語文。大一新生可就四種語文任選一科修習。大二學生可就四種語文任選一科修習，外文（一）及（二）可選擇修習同一語文，亦可選擇修讀不同語文，但以不重複修讀為原則。外語學院學生不得修習主修語文之大一、大二外文課程。外籍生、僑生原則上不得修習母語或僑居地語文。  
THE FOREIGN LANGUAGE courses are English, Japanese, German, and Korean. Both freshmen and sophomores can choose one language out of the four for study. For FOREIGN LANGUAGE I and FOREIGN LANGUAGE II, students may select the same or a different language; however, neither of these courses should be taken more than once. Students from the School of Foreign Languages and Cultures are not allowed to choose their major language when taking FOREIGN LANGUAGE courses. Likewise, international students and overseas Chinese students are not allowed to choose their native language or the language of their resident country when taking FOREIGN LANGUAGE courses.
- 學士班入學新生最遲在延長修業年限內，必須通過「外文能力」、「資訊能力」檢核與「美育活動」三項畢業標準，請參考教務處通識教育中心網頁。  
The Bachelor's Program requires newly admitted students to fulfill the graduation requirements of "FOREIGN LANGUAGE PROFICIENCY," "INFORMATION COMPETENCE," and "AESTHETIC EDUCATION & ACTIVITIES" before the end of the extended years of study. For additional information, please visit the General Education Center, Office of Academic Affairs webpage.