

114 學年度系所課程地圖 Department Curriculum Map for Academic Year(s) 114

系所概要 Department	
系所名稱 Department Name	土木工程學系 Department of Civil Engineering
班別 Program	學士班 Bachelor's Program

教育目標 Education Goals	
編號 Number	項目內容 Content
A	培育兼顧理論與實務能力之土木工程及科技人才。 To train students to have theoretical and practical capabilities in civil engineering and technology
B	培養學生具備團隊合作、國際視野與工程倫理之認知與能力。 To cultivate students with team-work competence, global vision and engineering ethics
C	強化防災與永續工程教育。 To enhance education in hazard mitigation and sustainable engineering

學生核心能力 Student Core Competencies		
編號 Number	項目內容 Content	對應教育目標編號 Corresponding Education Goal Number
A	土木工程計算、分析與設計能力。 Capability in computation and analysis for civil engineering theory	A
B	土木工程實務之分析、評估、設計、執行能力。 Capability in analysis, evaluation, design, and implementation for civil engineering practices	A、C
C	計畫管理、溝通、團隊合作、問題處理能力。 Capability in project management, communication, team work, and problem-solving	B
D	認識時事議題、瞭解土木工程人員之社會責任、重視工程與資訊倫理及培養持續學習之精神。 Acknowledgements in contemporary issues, societal responsibilities, engineering and information ethics, and continuing learning as civil engineers	B、C
E	結構工程、水利工程、大地工程、測量資訊、營建管理、土木防災、永續工程之專業知識 Professional knowledge in structural engineering, hydraulic engineering, geotechnical engineering, geomatics, construction management, hazard mitigation, and sustainable engineering	A、B

※附註 Note:

- 各系所所屬之班別，含學士班、碩士班、博士班等，請分別填寫。1. Complete the map separately for each division, including Bachelor's, Master's, and Doctoral program.
例如：資管學士班需填寫表二及表三；資管碩士班也須填寫表二及表三。For example, Forms 2 and 3 must be completed for Bachelor's program in Management Information Systems, and also for Master's program in for Bachelor's program in Management Information Systems.
- 教育目標及核心能力之代號皆以英文字母大寫為主。2. Codes for Education Goals and Core Competencies must be in uppercase English alphabet letters.
- 可依不同班（組）別填寫教育目標及核心能力。3. Education Goals and Core Competencies can be specific to the division in question.

承辦人簽章 Signature of Processing Clerk:

規劃單位主管簽章 Head of Planning Unit:

114 年 12 月 23 日 Date:2025/12/23

土木工程學系 Department of Civil Engineering ■學士班 Bachelor's Program

課程規畫表 Curriculum Plan

中文課程名稱 Course Title in Chinese	英文課程名稱 Course Title in English	規劃要點 (附註) Plans (Notes)				對應核心能力編號 Corresponding Education Goal Number	建議修課年級 Recommended Year of Study	開課單位 Course Offering Unit	備註 Remarks
		1	2	3	4				
院核心課程(若無免填，請加註必修、選修) College Core Courses (not required if none, otherwise please indicate Required Courses and Elective Courses)									
必修課程 Required Courses									
微積分(一)	Calculus(I)	U	A	S	3	A	1	應數系 Department of Applied Mathematics	
微積分(二)	Calculus(II)	U	A	S	3	A	1	應數系 Department of Applied Mathematics	
工程圖學	Engineering Graphics	U	AB	S	2	AB	1	土木系 Department Of Civil Engineering	107 學年開課 107 new course
計算機概論(一)	Introduction to Computer Science(I)	U	A	S	2	AB	1	土木系 Department Of Civil Engineering	
工程材料學	Engineering Materials	U	A	S	3	ABD	1	土木系 Department Of Civil Engineering	
工程材料學實驗	Experiment of Engineering Materials	U	B	S	1	ABC	2	土木系 Department Of Civil Engineering	先修科目： 工程材料學 Prerequisite： Engineering Materials
工程力學(一)	Engineering Mechanics(I)	U	A	S	3	AC	1	土木系 Department Of Civil Engineering	
工程數學(一)	Engineering Mathematics(I)	U	A	S	3	AB	2	土木系 Department Of Civil Engineering	
工程數學(二)	Engineering Mathematics(II)	U	A	S	3	AB	2	土木系 Department Of Civil Engineering	
水文學	Hydrology	U	A	S	3	ABD	2	土木系 Department Of Civil Engineering	
測量學(一)	Surveying(I)	U	A	S	2	ABD	2	土木系 Department Of Civil	

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		1	2	3	4				
								Engineering	
測量學(二)	Surveying(II)	U	A	S	2	ABD	2	土木系 Department Of Civil Engineering	先修科目： 測量學(一) Prerequisite： Surveying(I)
測量學實習	Laboratory of Surveying	U	B	S	1	ABC	2	土木系 Department Of Civil Engineering	
工程統計學(一)	Engineering Statistics(I)	U	A	S	3	ABD	2	土木系 Department Of Civil Engineering	先修科目： 微積分(一)、 微積分(二) Prerequisite： Calculus(I) Calculus(II)
材料力學	Mechanics of Materials	U	A	S	4	ABCD	2	土木系 Department Of Civil Engineering	
流體力學(一)	Fluid Mechanics(I)	U	A	S	3	AB	2	土木系 Department Of Civil Engineering	
結構學(一)	Structural Theory(I)	U	A	S	3	AB	2	土木系 Department Of Civil Engineering	109 學年起由 3 年級課程改為 2 年級課程 109 level 3 to 2
土壤力學(一)	Soil Engineering(I)	U	A	S	3	AB	2	土木系 Department Of Civil Engineering	先修科目： 材料力學 Prerequisite： Mechanics of Materials 109 學年起由 3 年級課程改為 2 年級課程 109 level 3 to 2
流體力學實驗	Experiment of Fluid Mechanics	U	B	S	1	ABC	3	土木系 Department Of Civil Engineering	先修科目： 流體力學(一) Prerequisite： Fluid Mechanics(I)
鋼筋混凝土學	Reinforced Concrete	U	A	S	3	AB	3	土木系 Department Of Civil Engineering	
土壤力學實驗	Experiment of Soil Engineering	U	B	S	1	ABC	3	土木系 Department Of Civil Engineering	先修科目： 土壤力學(一) Prerequisite： Soil Engineering(I)
結構學(二)	Structural Theory(II)	U	A	S	3	AB	3	土木系 Department Of Civil Engineering	先修科目： 結構學(一) Prerequisite： Structural Theory(I)
結構學實習	Laboratory Test of Structures	U	B	S	1	ABC	3	土木系 Department Of Civil Engineering	112 先修科目： 結構學(一) 改為結構學(二) 112Prerequisite： Structural Theory(I) →Structural Theory(II)

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		1	2	3	4				
基礎工程學(一)	Foundation Engineering(I)	U	A	S	3	ABCD	3	土木系 Department Of Civil Engineering	先修科目： 土壤力學(一) Prerequisite： Soil Engineering(I)
工程地質學	Engineering Geology	U	A	S	3	ABCD	3	土木系 Department Of Civil Engineering	
水利工程學(一)	Hydraulic Engineering(I)	U	A	S	3	ABCD	3	土木系 Department Of Civil Engineering	
土木工程專題研究	Topic Study in Civil Engineering	U	A	S	2	ABCD	4	土木系 Department Of Civil Engineering	108 學年下學期開課(107-1 申請改為 2 學分.且分 a.b.c.d 四班授課.每班規劃 25 人) 108-2 =2 credits per class=25 students

※附註：規劃要點填表說明：(1 到 4 各欄位請填正確代表字母)

Note: Instructions for completing this form are provided below (please provide the correct English alphabet letters in fields 1 to 4)

1： U-學士課程、M-碩士課程、D-博士課程。1: U-Bachelor's program, M-Master's program, D-Doctoral program.

2： A-正課、B-實習課、C-台下指導之科目如學生講述或邀請演講之專題討論、專題研究.....等。2: A-Lecture, B-Internship, C-Subjects with private guidance such as student presentations or invited speeches, topic discussions, topic research, etc.

3： S-學期課、Y-學年課。3: S-Semester course, Y-Year-long course.

4： 科目 (全期或全年) 總學分數 (請填阿拉伯數字)。4: Total course (full-semester or full-year) credits (in Arabic numerals).

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土木工程學系 Department of Civil Engineering ■學士班 Bachelor's Program

課程規畫表 Curriculum Plan

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		1	2	3	4				
選修課程 Elective Courses									
普通物理學	General Physics	U	A	Y	6	A	1	物理系 Department Of Physics	
普通物理學實驗	General Physics Lab	U	B	Y	2	AC	1	物理系 Department Of Physics	
普通化學	General Chemistry	U	A	S	3	A	1	化學系 Department Of Chemistry	
土木工程概論	Introduction to Civil Engineering	U	A	S	2	ABCD	1	土木系 Department Of Civil Engineering	
工程圖學(二)	Engineering Graphics(II)	U	A B	S	1	AB	1	土木系 Department Of Civil Engineering	
計算機概論(二)	Introduction to Computer Science(II)	U	A	S	2	ABC	1	土木系 Department Of Civil Engineering	
工程力學(二)	Engineering Mechanics(II)	U	A	S	3	AC	2	土木系 Department Of Civil Engineering	109 學年起 由必修改為選修 109 from Required Courses to Elective Courses
工程契約與倫理	Construction Contracting and Ethics	U	A	S	2	BD	2	土木系 Department Of Civil Engineering	
經濟學	Economics	U	A	S	2	AB	2	應經系 Department Of Applied Economics	
運輸工程概論	Introduction to Transportation Engineering	U	A	S	3	ABC	2	土木系 Department Of Civil Engineering	
施工法	Construction Method	U	A	S	3	ABCD	2	土木系 Department Of Civil Engineering	
電腦繪圖概論	Introduction to Computer Graphics	U	A	S	3	A	2	土木系 Department Of Civil Engineering	
測量學總實習	Practice in Surveying	U	B	S	1	ABCD	2	土木系 Department Of Civil Engineering	
工程數學(三)	Engineering Mathematics(III)	U	A	S	3	ABCD	3	土木系 Department Of Civil	

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		1	2	3	4				
								Engineering	
高等材料力學	Advanced Mechanics of Material	U	A	S	3	ABCD	3	土木系 Department Of Civil Engineering	先修科目： 材料力學 Prerequisite: Mechanics of Materials
營建管理	Construction Management	U	A	S	3	AC	3	土木系 Department Of Civil Engineering	
鋼筋混凝土設計	Design of Reinforced Concrete	U	A	S	3	ABD	3	土木系 Department Of Civil Engineering	先修科目： 鋼筋混凝土學 Prerequisite： Reinforced Concrete
工程數學(四)	Engineering Mathematics(IV)	U	A	S	3	ABCD	3	土木系 Department Of Civil Engineering	
隧道工程導論	Introduction to Tunnel Engineering	U	A	S	2	ABCD	3	土木系 Department Of Civil Engineering	
航空測量學	Photogrammetry	U	A	S	2	ABC	2	土木系 Department Of Civil Engineering	110 學年改為 2 學分 取消實習 110 change to 2 credits without practice
明渠水力學	Flow in Open Channels	U	A	S	3	ABC	3	土木系 Department Of Civil Engineering	
預力混凝土學	Prestressed Concrete	U	A	S	3	AB	4	土木系 Department Of Civil Engineering	
遙測學	Remote Sensing	U	A	S	3	ABCD	4	土木系 Department Of Civil Engineering	
地下水工程學	Groundwater Engineering	U	A	S	3	ABCD	4	土木系 Department Of Civil Engineering	
數值方法	Numerical Analysis	U	A	S	3	ABC	4	土木系 Department Of Civil Engineering	
基礎工程學(二)	Foundation Engineering(II)	U	A	S	2	ABCD	4	土木系 Department Of Civil Engineering	先修科目： 基礎工程學(一) Prerequisite： Foundation Engineering(I)
鋼結構設計	Analysis and Design of Steel Building Structures	U	A	S	3	ABCD	4	土木系 Department Of Civil Engineering	先修科目： 材料力學 Prerequisite： Mechanics of Materials 110-2 改名 110-2 course

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		1	2	3	4				
結構學(三)	Structural Theory(III)	U	A	S	3	AB	4	土木系 Department Of Civil Engineering	先修科目： 結構學(一) Prerequisite： Structural Theory(I)
結構動力學	Dynamics of Structures	U	A	S	3	ABCD	4	土木系 Department Of Civil Engineering	
岩石力學導論	Introduction to Rock Mechanics	U	A	S	2	ABCD	4	土木系 Department Of Civil Engineering	
地理資訊系統概論	Introduction to Geographic Information System	U	A	S	2	ABD	4	土木系 Department Of Civil Engineering	
水利工程學(二)	Hydraulic Engineering(II)	U	A	S	2	ABCD	4	土木系 Department Of Civil Engineering	先修科目： 水利工程學(一) Prerequisite： Hydraulic Engineering(I)
PC 在工程上之應用	Application of Personal Computer in Engineering	U	A	S	3	ABC	4	土木系 Department Of Civil Engineering	
大地測量學	Geodesy	U	A	S	2	AB	4	土木系 Department Of Civil Engineering	
土壤力學(二)	Soil Mechanics(II)	U	A	S	3	ABCD	4	土木系 Department Of Civil Engineering	先修科目： 土壤力學(一) Prerequisite： Soil Engineering(I)
應用土壤力學	Applied Soil Mechanics	U	A	S	3	AB	4	土木系 Department Of Civil Engineering	
鋼結構設計(二)	Design of Steel Structures(II)	U	A	S	3	ABCD	4	土木系 Department Of Civil Engineering	先修科目： 結構學(一)、 鋼結構設計 Prerequisite： Structural Theory(I)、 Analysis and Design of Steel Building Structures
橋樑工程	Bridge Engineering	U	A	S	3	ABCD	4	土木系 Department Of Civil Engineering	
應用水文學	Applied Hydrology	U	A	S	3	ABD	4	土木系 Department Of Civil Engineering	
排水工程	Drainage Engineering	U	A	S	3	ABC	4	土木系 Department Of Civil Engineering	

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		1	2	3	4				
混凝土配合設計	Design of Concrete Mixing	U	A	S	3	ABD	4	土木系 Department Of Civil Engineering	
工程品質控制	Construction Quality Control	U	A	S	3	BD	4	土木系 Department Of Civil Engineering	
工程測量	Engineering Survey	U	A	S	23	AB	34	土木系 Department Of Civil Engineering	107 改為 3 學分 4 年級選修 107 change to 3 credits Recommended for level 4
測量平差法	Surveying Data Adjustment	U	A	S	2	AB	3	土木系 Department Of Civil Engineering	
GNSS 全球導航衛星系統概論	An Introduction of Global Navigation Satellite System(GNSS)	U	A	S	3	AB	4	土木系 Department Of Civil Engineering	原 GPS 全球定位系統概論， 107 改名 An Introduction of Global Positioning System 107 renamed
橋基冲刷災害與防治對策	Bridge Scour and Protection	U	A	S	3	ABCD	4	土木系 Department Of Civil Engineering	
衛生工程學	Sanitary Engineering	U	A	S	3	ABC	3	土木系 Department Of Civil Engineering	
道路工程學	Highway Engineering	U	A	S	3	ABC	3	土木系 Department Of Civil Engineering	
土木工程實務	Civil Engineering Practice	U	A	S	2	ABCD	3	土木系 Department Of Civil Engineering	「土木工程實務-實習」需選修，否則不計學分。刪除備註、追溯 103 入學新生 "Civil Engineering Practice intern" is an elective course, otherwise it will not be counted as a credit. Trace back to 103
土木工程實務-實習	Civil Engineering Practice-intern	U	B	S	1	ABCD	4	土木系 Department	「土木工程實務」需先修，否則不計

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		1	2	3	4				
綠色工程	Green engineering	U	A	S	2	ABCD	4	土木系 Department Of Civil Engineering	
生態工程考量與檢核	Ecological engineering considerations and inspections	U	A	S	3	BCD	4	土木系 Department Of Civil Engineering	110 更名 110 course renamed
氣候變遷與環境衝擊	Climate Change and Environmental Impact	U	A	S	3	ABD	3	土木系 Department Of Civil Engineering	
BIM 在土木建築的應用與實作	Application and Practice of BIM in Civil Engineering and Architecture	U	A	S	3	ABC	2	土木系 Department Of Civil Engineering	113-1 改為3學分 113-1change to 3 3 credits
土木工程專題研究	Topic Study in Civil Engineering	U	A	S	2	ABCD	4	土木系 Department Of Civil Engineering	108 改為必修 108 Required Courses
感測器與資料擷取	Sensors and Data Acquisition	U	A	S	3	ABD	1	土木系 Department Of Civil Engineering	107 新開課程 107 new course
泥砂運行學	Hydraulics of Sediment Transport	U	A	S	3	ABD	4	土木系 Department Of Civil Engineering	110 新開課程 110 new course
地震工程概論	Introduction of Earthquake Engineering	U	A	S	3	ABD	4	土木系 Department Of Civil Engineering	110 新開課程 110 new course
流體力學(二)	Fluid Mechanics (II)	U	A	S	3	AB	3	土木系 Department Of Civil Engineering	110 復開課程 110 reopen course
中等材料力學	Intermediate Mechanics of Materials	U	A	S	2	ABCD	2	土木系 Department Of Civil Engineering	110-2 新開課程 先修科目： 材料力學 Prerequisite : Mechanics of Materials
瀝青混凝土	Asphalt Concrete	U	A	S	3	ABCD	4	土木系 Department Of Civil Engineering	110-2 新開課程 正課加實習 110-2 new course with practice
離岸風機基礎設計實務	Foundation Design Practice for Offshore Wind Turbine	U	A	S	2	ABCD	4	土木系 Department Of Civil Engineering	110-2 新開課程 先修科目： 土壤力學(一)、 基礎工程學(一)、 土壤力學實驗 Prerequisite : Soil Engineering(I)

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		1	2	3	4				
									Foundation Engineering(I) 、 Experiment of Soil Engineering
人工智慧在土木防災的應用	Application of Artificial Intelligence to Civil and Disaster Prevention Engineering	U	A	S	2	ABCD	3	土木系 Department Of Civil Engineering	111-1 新開課程 111-1 new course 先修科目： 計算機概論(一) Prerequisite： Introduction to Computer Science(I)
水庫環境與泥砂	Reservoir Environments and Sedimentation	U	A	S	3	ABCD	3	土木系 Department Of Civil Engineering	112-1 新開課程 112-1 new course
海岸工程與永續	Coastal Engineering and Sustainability	U	A	S	3	ABCD	4	土木系 Department Of Civil Engineering	112-1 新開課程 112-1 new course
空間結構設計	Design of Spatial Structures	U	A	S	3	ABC	4	土木系 Department Of Civil Engineering	112-2 新開課程 112-1 new course
施工圖	Construction Drawing	U	A	S	3	BDE	3	土木系 Department Of Civil Engineering	113-1 新開課程 113-1 new course
土木結構行為與系統	Behavior and Systems of Civil Structures	U	A	S	3	ABCDE	3	土木系 Department Of Civil Engineering	114-1 新開課程 114-1 new course
土木工程專案執行與管理實務	Civil Engineering Project Implementation and Management	U	A	S	2	ABCDE	3	土木系 Department Of Civil Engineering	114-1 新開課程 114-1 new course
系統思維與創新設計	Systems Thinking and Innovation Design	U	A	S	2	ABCDE	2	土木系 Department Of Civil Engineering	114-2 新開課程 114-12new course
人工智慧資料分析	Data Analytics of Artificial Intelligence	U	A	S	2	ABCDE	2	土木系 Department Of Civil Engineering	114-2 新開課程 114-12new course

※附註：規劃要點填表說明：(1 到 4 各欄位請填正確代表字母)

Note: Instructions for completing this form are provided below (please provide the correct English alphabet letters in fields 1 to 4)

1： U-學士課程、M-碩士課程、D-博士課程。1: U-Bachelor's program, M-Master's program, D-Doctoral program.

2： A-正課、B-實習課、C-台下指導之科目如學生講述或邀請演講之專題討論、專題研究……等。2: A-Lecture, B-Internship, C-Subjects with private guidance such as student presentations or invited speeches, topic discussions, topic research, etc.

3： S-學期課、Y-學年課。3: S-Semester course, Y-Year-long course.

4： 科目（全期或全年）總學分數（請填阿拉伯數字）。4: Total course (full-semester or full-year) credits (in Arabic numerals).

承辦人簽章 Signature of Processing Clerk:

規劃單位主管簽章 Head of Planning Unit:

114 年 12 月 23 日 Date:2025/12/23