

系所課程地圖 Department Curriculum Map

系所概要 Department	
系所名稱 Department Name	土壤環境科學系 Department of Soil and Environmental Sciences
班別 Division	碩士班 Graduate : Master's degree

教育目標 Education Goals	
編號 Number	項目內容 Content
1	提供土壤與環境科學之基礎與應用及跨領域之知識與訓練 Providing foundational and applied knowledge in soil and environmental sciences, as well as interdisciplinary training.
2	培養兼顧基本學理、專業知識及實際操作之土壤與環境科技人才 To cultivate talents in soil and environmental technology who possess a balance of fundamental theoretical knowledge, professional expertise, and practical skills.
3	培養團隊合作精神與溝通協調整合能力 To cultivate a spirit of teamwork and the ability to communicate, coordinate, and integrate effectively.
4	建立多元價值與國際觀 To establish diverse values and a global perspective.
5	強化農業永續經營與環境資源保育教育 To enhance education in sustainable agricultural management and environmental resource conservation.

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	具有土壤環境科學之專業知識符合國家專業人才之需求 Possessing professional knowledge in soil and environmental sciences that meets the nation's demand for skilled professionals.	1, 2, 5
B	溝通表達與團隊合作及解決土壤環境問題之能力 Communication skills, teamwork, and the ability to solve soil and environmental issues.	1, 5
C	尊重學術倫理、智慧財產權並具有獨立研究之能力 To respect academic ethics, intellectual property rights, and possess the ability to conduct independent research.	3
D	瞭解國際脈動與培養人文素養 To understand global trends and cultivate cultural literacy.	4

- ※附註 Note:
- 1.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.
 - 2.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.
 - 3.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.

111年12月21日 Date:2022/12/21

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				
必修課程 Required Courses									
專題討論 (一)	Seminar(1)	M	C	Y	2	A(30%) B(30%) C(20%) D(20%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	分abcd四組 Divided into four groups, from a to d.
專題討論 (二)	Seminar(2)	M	C	Y	2	A(30%) B(30%) C(20%) D(20%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	分abcd四組 Divided into four groups, from a to d.
實習教學	Practical Teaching	M	B	Y	0	A(30%) B(40%) C(25%) D(5%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	本地一般生必修，本地在職生及外籍生選修 Compulsory for local general students, optional for local working students and foreign students
碩士論文	Thesis	M	C	Y	6	A(60%) B(20%) C(20%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	

※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。
- 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).

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				
選修課程 Elective Courses									
黏土礦物學	Clay Mineralogy	M	A	S	2	A(30%) B(20%) C(30%) D(20%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
黏土礦物學實習	Practice of Clay Mineralogy	M	B	S	1	A(30%) B(20%) C(30%) D(20%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
土壤肥力診斷技術	Diagnosis of Soil Fertility	M	A	S	3	A(50%) B(30%) C(10%) D(10%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
分析毒理學	Analytical Toxicology	M	A	S	3	A(50%) B(30%) C(10%) D(10%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
環境微生物學特論	Special Topics on Environmental Microbiology	M	A	S	3	A(50%) B(20%) C(20%) D(10%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
土壤環境微生物研究法	Methodology of Soil Environmental Microorganism	M	A	S	2	A(60%) B(30%) C(10%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
地理統計學	Geostatistics	M	A	S	2	A(60%) B(20%) D(20%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
土壤生物化學	Soil Biochemistry	M	A	S	3	A(70%) B(20%) D(10%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
肥料試驗設計	Design of Fertilizer Experiment	M	A	S	3	A(30%) B(25%) C(20%) D(25%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
環境有機化學	Environmental Organic Chemistry	M	A	S	3	A(50%) B(30%) C(10%) D(10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
地下水整治復育特論	Special Topics on Groundwater Remediation	M	A	S	3	A(60%) B(25%) C(5%) D(10%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
環境數據品質目標	Environmental Data Quality Objectives	M	A	S	2	A(40%) B(30%) C(20%) D(10%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
環境數據品質評估	Environmental Data Quality Assessment	M	A	S	3	A(40%) B(30%) C(20%) D(10%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
土壤環境採樣法	Methods for Soil Environmental Sampling	M	A	S	2	A(40%) B(30%) C(20%) D(10%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
遙感探測之農業應用	Applications of Remote Sensing in Agriculture	M	A	S	2	A(60%) B(20%) D(20%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
同位素技術之應用	Application of Isotopic Technique	M	A	S	2	A(30%) B(20%) C(20%) D(30%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
地下水文學	Groundwater Hydrology	M	A	S	2	A(30%) B(30%) C(20%) D(20%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
環境中污染物之轉化與移動	Chemical Fate in the Environment	M	A	S	3	A(50%) (30%) C(10%) D(10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
土壤環境污染復育	Restoration of Contaminated Soil	M	A	S	3	A(30%) B(40%) C(30%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
土壤肥力調控與改良	Modification and Correction of Soil Fertility	M	A	S	3	A(50%) B(30%) C(10%) D(10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
高等土壤環境微生物	Advanced Soil Environmental Microbiology	M	A	S	3	A(50%) B(30%) C(10%) D(10%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	先修科目:土 壤學 Prerequisites "Soil Science"
土壤演育與分類	Soil Genesis and Classification	M	A	S	3	A(50%) B(30%) C(10%) D(10%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	

儀器分析	Instrumental Analysis	M	A	S	3	A(50%) B(30%) C(10%) D(10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
儀器分析實習	Practice of Instrumental Analysis	M	B	S	1	A(40%) B(40%) C(10%) D(10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
植物生物化學	Plant Biochemistry	M	A	S	3	A(70%) B(20%) D(10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
土壤生態特論	Special Topics on Soil Ecology	M	A	S	2	A(50%) B(20%) C(20%) (10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
高等植物營養學	Advanced Plant Nutrition	M	A	S	3	A(30%) B(20%) C(20%) D(30%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
奈米科技與環境	Nanotechnology and Environment	M	A	S	3	A(60%) B(25%) C(5%) D(10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
營養與病害	Mineral Nutrition and Plant Diseases	M	A	S	2	A(40%) B(30%) C(10%) D(30%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
土壤肥力調控與改良	Modification and Correction of Soil Fertility	M	A	S	3	A(50%) B(30%) C(10%) D(10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
高等土壤環境微生物	Advanced Soil Environmental Microbiology	M	A	S	3	A(50%) B(30%) C(10%) D(10%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	先修科目:土 壤學 Prerequisites "Soil Science"
土壤演育與分類	Soil Genesis and Classification	M	A	S	3	A(50%) B(30%) C(10%) D(10%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
儀器分析	Instrumental Analysis	M	A	S	3	A(50%) B(30%) C(10%) D(10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
儀器分析實習	Practice of Instrumental Analysis	M	B	S	1	A(40%) B(40%) C(10%) D(10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
植物生物化學	Plant Biochemistry	M	A	S	3	A(70%) B(20%) D(10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
土壤生態特論	Special Topics on Soil Ecology	M	A	S	2	A(50%) B(20%) C(20%) D(10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
高等植物營養學	Advanced Plant Nutrition	M	A	S	3	A(30%) B(20%) C(20%) D(30%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
奈米科技與環境	Nanotechnology and Environment	M	A	S	3	A(60%) B(25%) C(5%) D(10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
營養與病害	Mineral Nutrition and Plant Diseases	M	A	S	2	A(40%) B(30%) C(10%) D(30%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
環境污染採樣與分析原理	Principle of Sampling and Analysis of Environmental Pollution	M	A	S	3	A(60%) B(25%) C(5%) D(10%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
土壤化學特論	Special topics in soil chemistry	M	A	S	2	A(60%) B(20%) C(10%) D(10%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	
高等土壤化學	Advanced Course in Soil Chemistry	M	A	S	3	A(60%) B(20%) C(10%) D(10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	1051英文・遠 距 EMI, Distance Learning
環境表面化學	Environmental Surface Chemistry	M	A	S	2	A(60%) B(20%) C(10%) D(10%)	碩二 Second year of graduate school	土環所 Department of Soil and Environmental Sciences	
學術論文寫作：策略、技巧及道德	Academic Writing: Strategies, Skills, and Ethics	M	A	S	1	B(30%) C(30%) D(40%)		土環所 Department of Soil and Environmental Sciences	
遙感探測學	Remote Sensing	M	A	S	3	A(50%) B(50%)		土環所 Department of Soil and Environmental Sciences	英文・遠距 EMI, Distance Learning
氣候及氣候變遷	Climate and Climate Change	M	A	S	2	A(50%) B(50%)		土環所 Department of Soil and Environmental Sciences	英文・107-2 改學期中密集 授課 EMI

應用植物生理學	Applied Plant Physiology	M	A	S	3	A(40%) B(30%) C(15%) D(15%)	碩一 First year of graduate school	土環所 Department of Soil and Environmental Sciences	107-2新增 academic year added
有機及產銷履歷農產品驗證制度與稽核實務	Auditing Practice for Certification of Organic and TAP Agro-Product	M	A	S	2	A(80%) B(20%)	碩一 First year of graduate school	植醫學程 Master Program in Plant Medicine and Good Agricultural Practice	108-2新增 academic year added

※附註：規劃要點填表說明：(1 到 4 各欄位請填正確代表字母)

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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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