國立暨南國際大學土木工程學系博士班必選修科目一覽表
Doctoral Program Course Catalog of Department of Civil Engineering ,National Chi Nan University

本表(112)學年度入學新生適用 Effective for students admitted in Fall, 2023

最低畢業學分為18學分，均為選修課程學分；「專題討論」為必修課程，其學分不計入最低畢業學分18學分內。通過資格考試後，免修「專題討論」。

Doctoral program requirements: a minimum of 18 credit hours of elective courses is required for graduation. "Seminar" is a required course, but its credits are not included in the minimum 18 credit hours required for graduation. After passing the qualifying examination, students are exempt from taking "Seminar."

課程代號 Course Code	課 程 名 稱(中文及英文) Course Name (Chinese and English)	學分數 Credits	修別 Course type(required/elective)	開課年級 Course availability(freshman/sophomore/junior/senior)	備 註 Notes
229001	專題研究（一）Independent Study (I)	1	必required	一上 freshman 1st	
229011	專題研究（二）Independent Study (II)	1	必required	一下 freshman 2nd	通過資格考試後免修 After passing the qualifying exam not required .
229016	專題研究（三）Independent Study (III)	1	必required	二上 sophomore 1st	通過資格考試後免修 After passing the qualifying exam not required .
229019	專題研究（四）Independent Study (IV)	1	必required	二下 sophomore 2nd	通過資格考試後免修 After passing the qualifying exam not required .
229021	專題研究（五）Independent Study (V)	1	必required	三上 junior 1st	通過資格考試後免修 After passing the qualifying exam not required .
229025	專題研究（六）Independent Study (VI)	1	必required	三下 junior 2nd	通過資格考試後免修 After passing the qualifying exam not required .
229002	專題討論（一）Seminar (I)	1	必required	一上 freshman 1st	
229012	專題討論（二）Seminar (II)	1	必required	一下 freshman 2nd	通過資格考試後免修 After passing the qualifying exam not required .
229015	專題討論（三）Seminar (III)	1	必required	二上 sophomore 1st	通過資格考試後免修 After passing the qualifying exam not required .
229020	專題討論（四）Seminar (IV)	1	必required	二下 sophomore 2nd	通過資格考試後免修 After passing the qualifying exam not required .
229022	專題討論（五）Seminar (V)	1	必required	三上 junior 1st	通過資格考試後免修 After passing the qualifying exam not required .

229024	專題討論（六）Seminar (VI)	1	必required	三下 junior 2nd	通過資格考試後免修 After passing the qualifying exam not required .
229032	複合材料力學 Mechanics of Composite Materials	3	選elective	二 Doctorate 1st/2nd Semester	
229029	高等工程數學(二) Advanced Engineering Mathematics (II)	3	選elective	二 Doctorate 1st/2nd Semester	
229013	微觀力學Micromechanics	3	選elective	二 Doctorate 1st/2nd Semester	
229007	風險評估與決策分析Risk Analysis and Decision Making	3	選elective	二 Doctorate 1st/2nd Semester	
229006	大地地震工程學Geotechnical Earthquake Engineering	3	選elective	二 Doctorate 1st/2nd Semester	
229008	地工合成物概論Introduction to Geosynthetics	3	選elective	二 Doctorate 1st/2nd Semester	
229014	環境力學(二) Mechanics of Continua for Environmental Problems (II)	3	選elective	二 Doctorate 1st/2nd Semester	
229005	環工特論(一) Special Topics for Environmental Engineering (I)	2	選elective	二 Doctorate 1st/2nd Semester	
229014	環工特論(二) Special Topics for Environmental Engineering (II)	2	選elective	二 Doctorate 1st/2nd Semester	
229009	運輸經營與管理Transportation Operations and Managements	3	選elective	二 Doctorate 1st/2nd Semester	
229010	高等運輸網路分析Advanced Transportation Network Analysis	3	選elective	二 Doctorate 1st/2nd Semester	
229003	運輸與物流分析方法 Transportation and Logistics Analysis Methods	3	選elective	二 Doctorate 1st/2nd Semester	
229018	演化式計算與運輸分析Evolutionary Computation and Transportation Analysis	3	選elective	二 Doctorate 1st/2nd Semester	
229026	運輸組織與管理Transportation Organization and Mangement	3	選elective	二 Doctorate 1st/2nd Semester	
229035	土壤行為與土壤工程特性Soil Behavior and Engineering soil characterigation	3	選elective	二 Doctorate 1st/2nd Semester	
229036	地震學Seismology	3	選elective	二 Doctorate 1st/2nd Semester	

229038	地理資訊系統Geographic Information Systems	3	選elective	Doctorate 1st/2nd Semester	
229039	高等基礎工程學 Advanced Foundation Engineering	3	選elective	Doctorate 1st/2nd Semester	
229040	工程與防災風險管理概論Introduction to Risk Management - Engineering and Natural Hazard Application	3	選elective	Doctorate 1st/2nd Semester	
229041	運輸系統分析概論Transportation Systems Analysis	3	選elective	Doctorate 1st/2nd Semester	
229042	環工特論與實驗(I) Special Topics and Experiments for Environmental Engineering (I)	3	選elective	Doctorate 1st/2nd Semester	
229043	工程監檢測概論Introduction to Engineering Monitoring and Inspection	3	選elective	Doctorate 1st/2nd Semester	
229044	運輸安全分析Transportation Safety Analysis	3	選elective	Doctorate 1st/2nd Semester	
229045	高等結構學Advanced Structural Analysis	3	選elective	Doctorate 1st/2nd Semester	
229046	實驗力學Experimental Mechanics	3	選elective	Doctorate 1st/2nd Semester	
229047	應用力學特論Special Topics on Applied Mechanics	3	選elective	Doctorate 1st/2nd Semester	
229048	環工特論與實驗(II)Special Topics and Experiments for Environmental Engineering (II)	3	選elective	Doctorate 1st/2nd Semester	
229049	運輸科技Transportation Technology	2	選elective	Doctorate 1st/2nd Semester	
229050	政府採購法實務Government Procurement Law practice	3	選elective	Doctorate 1st/2nd Semester	
229052	岩石力學Rock Mechanics	3	選elective	Doctorate 1st/2nd Semester	
229053	環工特論與實驗(III) Special Topics and Experiments for Environmental Engineering(III)	3	選elective	Doctorate 1st/2nd Semester	
229054	接觸力學Contact Mechanics	3	選elective	Doctorate 1st/2nd Semester	
229056	水處理工程與設計Water and Wastewater Treatment Engineering and Design	3	選elective	Doctorate 1st/2nd Semester	

229057	地下水污染防治Groundwater Pollution Remediation	3	選elective	Doctorate 1st/2nd Semester	
229034	土壤及地下水污染整治Soil and Groundwater Contamination and Remediation	3	選elective	Doctorate 1st/2nd Semester	
229058	遙感探測理論與實習 Remote Sensing Theory and Practice	3	選elective	Doctorate 1st/2nd Semester	
229059	土壤及地下水採樣與分析Soil and Groundwater Sampling and Analysis	3	選elective	Doctorate 1st/2nd Semester	
229060	環境工程單元操作Unit Operation for Environmental Engineering	3	選elective	Doctorate 1st/2nd Semester	
229061	綠色工程、工法與材料Green engineering、construction and material	3	選elective	Doctorate 1st/2nd Semester	
229062	科技簡報Technical Presentation	3	選elective	Doctorate 1st/2nd Semester	
229063	浚挖設備與其在工程上之應用Dredging Equipment and Its Engineering Application	3	選elective	Doctorate 1st/2nd Semester	
229064	科技英文寫作Technical English Writing	3	選elective	Doctorate 1st/2nd Semester	
229065	影像測量學原理與應用 Photogrammetry – Theory and Application	3	選elective	Doctorate 1st/2nd Semester	
229066	土砂防災策略與規劃實務 Sediment Disaster Prevention Countermeasure	3	選elective	Doctorate 1st/2nd Semester	
229067	水資源及環境工程設計實務 Water Resources and Environmental	3	選elective	Doctorate 1st/2nd Semester	
229068	運輸與物流管理Transportation and Logistics Management	3	選elective	Doctorate 1st/2nd Semester	
229069	土砂災害警戒系統規劃與設計Sediment Disaster Warning System Planning and Design	3	選elective	Doctorate 1st/2nd Semester	
229070	土木及大地工程設計實務Civil and Geotechnical Engineering Design	3	選elective	Doctorate 1st/2nd Semester	
229055	空氣污染防制Air Pollution Control	3	選elective	Doctorate 1st/2nd Semester	
229071	運輸與物流風險管理Transportation and Logistics Risk Management	3	選elective	Doctorate 1st/2nd Semester	

229072	水高級處理及再利用 Advanced Water Treatment and Reuse	3	選elective	二 Doctorate 1st/2nd Semester	
229073	振動力學Engineering Vibrations	3	選elective	二 Doctorate 1st/2nd Semester	
229074	地震工程學特論Special Topics in Earthquake	3	選elective	二 Doctorate 1st/2nd Semester	
229075	有限元素結構分析Finite Element Method for Structural Analysis	3	選elective	二 Doctorate 1st/2nd Semester	
229076	結構矩陣法Matrix Methods of Structural Analysis	3	選elective	二 Doctorate 1st/2nd Semester	
229077	職業安全衛生管理系統職業安全衛生管理系統 Occupational Safety and Health Management System	3	選elective	二 Doctorate 1st/2nd Semester	
229079	結構力學概論Introduction of Structural Mechanics	3	選elective	二 Doctorate 1st/2nd Semester	

填表人：_____系(所)主管：_____院長：_____填表日期：