

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(110)學年度入學新生適用 Effective for students admitted in Fall, 2021

最低畢業學分：18學分，通過資格考試後得免修專題研究與專題討論。

Doctoral program requirements: a minimum of 18 credit hours. After passing the qualifying exam, taking "Independent Study" and "Seminar" courses are not required .

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	
229011	專題研究(二) Independent Study (II)	1	必required	一下	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	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	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	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	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	
229012	專題討論(二) Seminar (II)	1	必required	一下	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	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	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	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	通過資格考試後免修 After passing the qualifying exam not required .
225008	有限元素法Finite Element Method	3	選elective	3GP	

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225011	結構動力學Dynamics of Structures	3	選elective	4GP	
225019	彈性力學Theory of Elasticity	3	選elective	3GP	
225034	高等材料力學 Advanced Mechanics of Materials	3	選elective	3GP	
225043	高等有限元素法Advanced Finite Element Methods	3	選elective	4GP	
229032	複合材料力學 Mechanics of Composite Materials	3	選elective	3GP	
225064	電腦輔助結構工程Computer Aided Structural Engineering	3	選elective	4GP	
225053	混凝土結構動力行為學Dynamic Behavior of Concrete Structures	3	選elective	GP	
225051	高等工程數學(一) Advanced Engineering Mathematics (I)	3	選elective	3GP	
229029	高等工程數學(二) Advanced Engineering Mathematics (II)	3	選elective	3GP	
229013	微觀力學Micromechanics	3	選elective	GP	
225005	土壤動力學Soil Dynamics	3	選elective	4GP	
225027	邊坡穩定設計與分析Slope Stability	3	選elective	4GP	
225058	土工合成材之工程應用Engineering Application of Geosynthetics	3	選elective	3GP	
225059	土壤加勁與改良Soil Reinforcement and Improvement	3	選elective	4GP	
225037	土木工程可靠度分析Reliability Analysis in Civil Engineering	3	選elective	3GP	
229007	風險評估與決策分析Risk Analysis and Decision Making	3	選elective	3GP	
229006	大地地震工程學Geotechnical Earthquake Engineering	3	選elective	4GP	

229008	土工合成物概論 Introduction to Geosynthetics	3	選elective	GP	
225016	明渠水力學 Open Channel Flow	3	選elective	3GP	
225023	中等流體力學 Advance Fluid Dynamics	3	選elective	3GP	
225078	計算流體力學(一) Computational Fluid Dynamics (I)	3	選elective	3GP	
225071	計算流體力學(二) Computational Fluid Dynamics (II)	3	選elective	3GP	
225068	水利計算模式 Hydraulic Models	3	選elective	3GP	
225042	應用數學 Applied Mathematics	3	選elective	4GP	
225072	環境力學(一) Mechanics of Continua for Environmental Problems (I)	3	選elective	4GP	
229014	環境力學(二) Mechanics of Continua for Environmental Problems (II)	3	選elective	4GP	
225006	水質分析 Water and Wastewater Analysis	3	選elective	3GP	
225031	環工物化處理 Physical and Chemical Treatment for Environmental Engineering	3	選elective	3GP	
225018	環工生物處理 Biological Treatment for Environmental Engineering	3	選elective	3GP	
225036	環境微生物學 Environmental Microbiology	3	選elective	3GP	
225048	生物膜科學 Biofilm Science	3	選elective	GP	
225060	污染防治系統規劃與設計 Planning and design for pollution control systems	3	選elective	3GP	
225061	環境化學 Environmental Chemistry	3	選elective	3GP	
225070	環工生物統計 Environmental Biostatistics	3	選elective	3GP	

229005	環工特論(一) Special Topics for Environmental Engineering (I)	2	選elective	GP	
229014	環工特論(二) Special Topics for Environmental Engineering (II)	2	選elective	4GP	
225049	運輸科技Transportation Technology	3	選elective	GP	
225054	運輸系統分析 Transportation System Analysis	3	選elective	GP	
225039	高等運輸規劃 Advanced Transportation Planning	3	選elective	3GP	
229009	運輸經營與管理Transportation Operations and Managements	3	選elective	GP	
229010	高等運輸網路分析Advanced Transportation Network Analysis	3	選elective	4GP	
229003	運輸與物流分析方法 Transportation and Logistics Analysis Methods	3	選elective	GP	
229018	演化式計算與運輸分析Evolutionary Computation and Transportation Analysis	3	選elective	GP	
225081	計算材料科學Computational Material Science	3	選elective	GP	
229026	運輸組織與管理Transportation Organization and Mangement	3	選elective	GP	
229035	土壤行為與土壤工程特性Soil Behavior and Engineering soil characterization	3	選elective	GP	
229036	地震學Seismology	3	選elective	3GP	
229038	地理資訊系統Geographic Information Systems	3	選elective	3GP	
229039	高等基礎工程學 Advanced Foundation Engineering	3	選elective	4GP	
229040	工程與防災風險管理概論Introduction to Risk Management - Engineering and Natural Hazard Application	3	選elective	4GP	
229041	運輸系統分析概論Transportation Systems Analysis	3	選elective	GP	

229042	環工特論與實驗(I) Special Topics and Experiments for Environmental Engineering (I)	3	選elective	GP	
229043	工程監檢測概論Introduction to Engineering Monitoring and Inspection	3	選elective	3GP	
229044	運輸安全分析Transportation Safety Analysis	3	選elective	GP	
229045	高等結構學Advanced Structural Analysis	3	選elective	3GP	
229046	實驗力學Experimental Mechanics	3	選elective	3GP	
229047	應用力學特論Special Topics on Applied Mechanics	3	選elective	GP	
229048	環工特論與實驗(II)Special Topics and Experiments for Environmental Engineering (II)	3	選elective	GP	
229049	運輸科技Transportation Technology	2	選elective	GP	
225069	運輸管理Transportation Management	3	選elective	GP	
225056	數學規劃Mathematical Programming	3	選elective	3GP	
229050	政府採購法實務Government Procurement Law practice	3	選elective	3GP	
229052	岩石力學Rock Mechanics	3	選elective	4GP	
229053	環工特論與實驗(III) Special Topics and Experiments for Environmental Engineering(III)	3	選elective	GP	
229054	接觸力學Contact Mechanics	3	選elective	4GP	
229056	水處理工程與設計Water and Wastewater Treatment Engineering and Design	3	選elective	3GP	
229057	地下水污染防治Groundwater Pollution Remediation	3	選elective	3GP	
229034	土壤及地下水污染整治Soil and Groundwater Contamination and Remediation	3	選elective	3GP	

229058	遙感探測理論與實習 Remote Sensing Theory and Practice	3	選elective	4GP	
229059	土壤及地下水採樣與分析Soil and Groundwater Sampling and Analysis	3	選elective	GP	
229060	環境工程單元操作Unit Operation for Environmental Engineering	3	選elective	3GP	
229061	綠色工程、工法與材料Green engineering、construction and material	3	選elective	4GP	
229062	科技簡報Technical Presentation	3	選elective	3GP	
229063	浚挖設備與其在工程上之應用Dredging Equipment and Its Engineering Application	3	選elective	3GP	
229064	科技英文寫作Technical English Writing	3	選elective	GP	
229065	影像測量學原理與應用 Photogrammetry - Theory and Application	3	選elective	3GP	
229066	土砂防災策略與規劃實務 Sediment Disaster Prevention Countermeasure	3	選elective	3GP	
229067	水資源及環境工程設計實務 Water Resources and Environmental	3	選elective	3GP	
229068	運輸與物流管理Transportation and Logistics Management	3	選elective	3GP	
229069	土砂災害警戒系統規劃與設計Sediment Disaster Warning System Planning and Design	3	選elective	3GP	
229070	土木及大地工程設計實務Civil and Geotechnical Engineering Design	3	選elective	3GP	
229055	空氣污染防制Air Pollution Control	3	選elective	3GP	
229071	運輸與物流風險管理Transportation and Logistics Risk Management	3	選elective	3GP	
229072	水高級處理及再利用 Advanced Water Treatment and Reuse	3	選elective	3GP	
229073	振動力學Engineering Vibrations	3	選elective	3GP	

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229074	地震工程學特論Special Topics in Earthquake	3	選elective	3GP	
229075	有限元素結構分析Finite Element Method for Structural Analysis	3	選elective	3GP	
229076	結構矩陣法Matrix Methods of Structural Analysis	3	選elective	3GP	
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	3GP	
225107	環境管理與永續發展Environmental Management and Sustainable Development	3	選elective	3GP	
229079	結構力學概論Introduction of Structural Mechanics	3	選elective	3GP	

填表人：_____系(所)主管：_____院長：_____填表日期：_____