朝陽科技大學 096學年度第1學期教學大綱
Advanced Reinforced Concrete 高等混凝土

當期課號	7136	Course Number	7136
授課教師	顏聰	Instructor	YEN,TSONG
中文課名	高等混凝土	Course Name	Advanced Reinforced Concrete
開課單位	營建工程系碩士班一A	Department	
修習別	選修	Required/Elective	Elective
學分數	3	Credits	3
課程目標	「本課程從微觀角度及巨觀性徵，介述混凝土及高性能混凝土之組織、強度、變形與破壞特質， 使學生得以深一層地瞭解混凝土之工學性質與工程技術。」	Objectives	This course interprets the composition、strength、deformation and fracture of normal concrete and high-performance concrete, including microscopic viewpoint and macroscopic properties. It is an advanced course, aims to teach students learning on the higher level of engineering properties and technologies of concrete.
教材	1.隨堂講義 2.簡報檔	Teaching Materials	1.Lecture 2.Instruction power point
成績評量方式	期中考(30%) 期末考(40%) 報告(30%)	Grading	intersemester test(30%) final examination(40%) report(30%)
教師網頁	http://www.cyut.edu.tw/~ce/department/tyen.htm		
教學內容	1.緒論 2.混凝土之組成與結構 3.水泥之水化反應及水化產物結構 4.混凝土之理想強度與實際強度 5.強度之構成與力學性質分析 6.強度形成之工學要件 7.混凝土變形－變形種類及瞬時變形 8.混凝土變形－依時性變形 9.混凝土變形－溫度變形及疲勞變形 10.期中考 11.混凝土破壞－結構應力破壞 12.混凝土破壞－組織性破壞 13.混凝土破壞－組織性破壞 14.高性能混凝土－特性與組成材料 15.高性能混凝土－配比設計 16.高性能混凝土－早期工程性質與硬固性質 17.專題報告 18.期末考	Syllabus	1.Introduction 2.Composition and structure of concrete 3.Hydration of cement and microstructure of hydrate 4.Ideal strength and practical strength of concrete 5.Strength formation and mechanical properties analysis 6.Technology of strength development 7.Deformation of concrete-types and instantaneous deformation 8.Deformation of concrete-time dependent deformation 9.Deformation of concrete-thermal deformation and fatigue deformation 10.Intersemester test 11.Failure of concrete-structural fracture 12.Failure of concrete-composition failure 13.Failure of concrete-durability 14.High-performance concrete-properties and material 15.High-performance concrete-mix proportioning 16.High-performance concrete-engineering and mechanical properties 17.Special topic report 18.Final examination

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