# 朝陽科技大學 097學年度第2學期教學大綱
# Advanced Prestressed Concrete 高等預力混凝土

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| 當期課號 | 7133 | Course Number | 7133 |
| 授課教師 | 顏聰 | Instructor | YEN,TSONG |
| 中文課名 | 高等預力混凝土 | Course Name | Advanced Prestressed 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 | 本課程旨在基於大學部對預力混凝土材料與結構之基礎認知，進一步培養學生在預力損失（潛變與收縮）、拱勢與撓度等之深度分析能力，複合梁、連續梁、預力梁極限強度及預力梁剪力等之分析與設計能力 | Objectives | Based on the basic knowledges of prestressed concrete in undergraduate course, this advanced course intends to teach students learning on prestress losses of creep and shrinkage, analysis of cambel and deflection, composite beam, continuous beam, analysis and design of ultimate strength and shear stress of prestressed concrete beam. |
| 教材 | 1.講義<br>2."Design of Prestressed Concrete", 2nd edition, by Artuhr H. Nilson, John Wiley & Suns. Inc.<br>3."Modern Prestressed Concrete", 3rd edition, by James R. Libby, Rainbow-Bridge Book Co.<br>4."Prestressed Concrete", 2nd edition, by Edward G. Navy, Prentice-Hall Inc. | Teaching Materials | 1.Lecture<br>2."Design of Prestressed Concrete", 2nd edition, by Artuhr H. Nilson, John Wiley & Suns. Inc.<br>3."Modern Prestressed Concrete", 3rd edition, by James R. Libby, Rainbow-Bridge Book Co.<br>4."Prestressed Concrete", 2nd edition, by Edward G. Navy, Prentice-Hall Inc. |
| 成績評量方式 | 期中考(40%)<br>期末考(40%)<br>習作(20%) | Grading | intersemester test(40%)<br>final examination(40%)<br>practice(20%) |
| 教師網頁 | | | |
| 教學內容 | 1.緒論<br>2.高強度混凝土及預力鋼腱<br>3.預力損失之分析與計算<br>4.撓曲分析與設計理論<br>5.撓曲設計理念<br>6.混凝土潛變之數理分析與實用計算<br>7.混凝土收縮之數理分析與實用計算<br>8.拱勢與撓度分析<br>9.拱勢與撓度分析<br>10.期中考<br>11.複合梁－撓曲應力分析<br>12.複合梁－水平剪力傳遞<br>13.連續梁－直線型鋼腱<br>14.連續梁－曲線型鋼腱<br>15.預力梁之極限強度分析<br>16.預力梁之極限強度設計<br>17.預力梁之剪力分析與設計<br>18.期末考 | Syllabus | 1.Introduction<br>2.High-strength concrete and tendons<br>3.Analysis and calculation of prestress losses<br>4.Basic principles for flexural design<br>5.Basic principles for flexural design<br>6.Analysis and calculation for concrete creep<br>7.Analysis and calculation for concrete shrinkage<br>8.Analysis for camber and deflection<br>9.Analysis for camber and deflection<br>10.Intersemester test<br>11.Composite beam-flexural analysis<br>12.Composite beam-shear force<br>13.Composite beam-straight tendons<br>14.Composite beam-curved tendons<br>15.Ultimate strength analysis of prestressed beams<br>16.Ultimate strength design of prestressed beams<br>17.Shear analysis and design of prestressed beams<br>18.Final examination |

尊重智慧財產權，請勿非法影印。