朝陽科技大學 094學年度第2學期教學大綱
Design of Experiment 實驗設計

當期課號	1453	Course Number	1453
授課教師	何琦琛	Instructor	HO,CHYI CHEN
中文課名	實驗設計	Course Name	Design of Experiment
開課單位	應用化學系(四日)三A	Department	
修習別	選修	Required/Elective	Elective
學分數	2	Credits	2
課程目標	本課程介紹設計試驗時應進行的思考，協助學生 1. 對所欲進行的試驗有更清晰的瞭解。 2. 思考、判斷並選擇有效合適而足量的試驗方法及數據，排除干擾試驗結果的因素。 3. 減少人爲偏差而引致試驗失誤。 4. 適當的處理與管理資料，減低數據損毀的機率。	Objectives	This course introduces the considerations that should be taken when design an experiment, and help the students 1. To understand the objective more clearly. 2. To think of, judge, and choose the effective and adequate method, to exclude interfering extraneous factors, and to collect adequate and enough data. 3. To reduce experimental errors cause by artificial bias. 4. To handle and manage data adequately to avoid the loss of data.
教材	自編power point講義	Teaching Materials	Edited power point file
成績評量方式	期中考30% 期末考30% 試驗設計報告30% 課程參與度10%	Grading	Mid-term examination 30% Final examination 30% Experiment design report 30% Class participation 10%
教師網頁			
教學內容	本課程的目的在介紹試驗設計的基本觀念，而不在於做試驗的各種方法和技巧，期望能引導學生思考所欲從事研究的內容和性質，以增進對研究題材的瞭解，從而設計並規劃試驗的內容及步驟，減少在試驗、蒐集數據、記錄整理數據等過程中可能犯的錯誤；同時也因能清晰的向統計專家說明試驗的內容及性質，而取得最佳的統計分析建議。 　　課程中將依下列大綱逐步介紹試驗設計的重要性及進行步驟。 一、研究計畫的規劃－簡介 二、研究的題目 三、設計試驗要應用的一些基本名辭 四、訂定所要蒐集的數據 五、設計記錄資料數據的表格 六、問卷設計 七、選擇參試個體(U-sample) 八、樣品數(sample size)的決定 九、減少樣品的方法 十、分配參試個體至處理	Syllabus	This course is aimed on the introduction of basic conceptions of experiment designation, not on the methodology and techniques of carrying an experiment. It intends to guide students to think clearly on the substance and property of one's research, to get better understand on the research subject, to design the experiment, to plan the steps, and to reduce the errors possibly made during the experiment, the collection and record of data. It also intends to help students to give better description on the research/experiment to get better suggestions on data analysis from statistician. The course will introduce the importance and steps of experiment design in accordance with the following program: 1. Planning of a research program, an introduction. 2. Defining of research subject. 3. Basic component to be considered. 4. Data type to be collected. 5. Recording data. 6. Designation of questionnaire 7. Choosing the experiment unit. 8. Sample size. 9. Reduction of the sample size. 10. Allocation of experiment unit to treatments.

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