朝陽科技大學 096學年度第2學期教學大綱
Wastewater Laboratory 廢水處理實驗

當期課號	1650	Course Number	1650
授課教師	莊順興	Instructor	CHUANG,SHUN HSING
中文課名	廢水處理實驗	Course Name	Wastewater Laboratory
開課單位	環境工程與管理系(四日)二A	Department	
修習別	必修	Required/Elective	Required
學分數	1	Credits	1
課程目標	本課程爲配合廢水處理之實驗課程，教學之目標爲訓練學生實驗室單元操作的方法，及各種水質分析的技巧，並學習分組合作及撰寫實驗報告。實驗內容包括物理處理單元、化學處理單元及生物處理單元。	Objectives	The objectives of this course are to train students various laboratory skills for unit operations and processes. Students are divided into several groups to learn teamwork and writing skill for laboratory report as well. The experiments include sedimentation and adsorption for physical treatment; jar test for coagulation and disinfection for chemical treatment; BOD kinetics and activated sludge pilot plant operation.
教材	1.廢水處理單元設計及操作準則之試驗建立，工業局污染技術服務團、中技社編印。 2.Metcalf & Eddy Inc., Wastewater Engineering – Treatmant, Disposal, and Reuse, McGraw-Hill Book Company, 1991.	Teaching Materials	1.廢水處理單元設計及操作準則之試驗建立，工業局污染技術服務團、中技社編印。 2.Metcalf & Eddy Inc., Wastewater Engineering – Treatmant, Disposal, and Reuse, McGraw-Hill Book Company, 1991.
成績評量方式	1.平時成積 (出席率、課堂討論) 30 % 2.面談口試 30% 3.實驗成績(實驗參與度、實驗報告) 40%	Grading	1.Class participation 30% 2.Examination 30% 3.Reports 40%
教師網頁	http://www.cyut.edu.tw/~typai/		
教學內容	本課程爲環管系二年級必修課程，乃配合廢水處理之實驗課程。教學之目標爲訓練學生實驗室單元操作的方法，及各種水質分析的技巧，並學習分組合作及撰寫實驗報告。實驗內容包括物理單元之沈澱試驗及吸附實驗，化學單元之瓶杯實驗及加氯消毒實驗；生物實驗包含微生物之菌相觀察、活性污泥操作、反應動力分析等。	Syllabus	This course is provided to the second-year students along with the Wastewater Engineering course. The teaching bjective is to train students various laboratory skills for unit operations and processes. Students are divided into several groups to learn team work and writing skill for laboratory report as well. The experiments include sedimentation and adsorption for physical treatment; jar test for coagulation and disinfection for chemical treatment; BOD kinetics and activated sludge pilot plant operation. During the pilot operation, samples are taken for analyses to learn important operating parameters, such as F/M, MLSS, SVI, DO. Microscopic examination and on-line monitoring are also performed to enhance the monitoring skill. Each group is also asked to conduct a term paper on one unit treatment for functional design by using the computer spreadsheet technique.

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