

國立中正大學課程大綱
National Chung Cheng University
Course Syllabus

學年/學期(Academic Year / Semester)	110/1		
課程名稱(Course name)	Advanced Environmental Chemistry (高等環境化學)		
課碼(Course code)		學分數 Credit(s)	3
授課教師(Instructor)	Chien-Yen Chen 陳建易 Email: chien-yen.chen@oriel.oxon.org tel: +886-5-2720411 ext. 66220		
	<input type="checkbox"/> Professor <input type="checkbox"/> Associate Professor <input type="checkbox"/> Assistant Professor		
授課方式 (teaching methods)	<input type="checkbox"/> Lab <input type="checkbox"/> Seminar <input checked="" type="checkbox"/> Student Presentation <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> other		
先修科目(Prerequisite)	no		
課程介紹與教學目標 (Course Description and Objectives)	<p>Course Description–(3 credits): This course will review and introduce the chemical principles necessary to critically study the Environmental Chemistry. Environmental Chemistry is an application of chemical principles to the study of the environment. This is a course in chemistry for environmental science. Environmental chemistry is a range of concepts from chemistry and various environmental sciences. Environmental chemistry is an interdisciplinary science that includes atmospheric, aquatic and soil chemistry.</p> <p>Objectives: The objective of this course is to introduce individuals entering the environmental chemistry and closely aligned fields to the innate complexity and interconnectedness of the processes that occur in the natural environment.</p>		
教科書及參考書 (Textbooks and References)	ENVIRONMENTAL CHEMISTRY by C. Baird, et al., (4th Edition), W. H. Freeman and Company, New York, 2009. ISBN-13: 9781429201469, ISBN-10: 1429201460.		
學習評量與成績配分 (Assessment and Grade scale)	Exam-1.....20% (Week-08) Exam-2.....30% (Week-16) Homework.....20% Oral Presentations.....30%		
課程要求 (Course Requirements)	Attendance is required		
課程進度(Course Schedule)			

Week	Contents
Week 01	The Environmental Chemistry: an overview
Week 02	Stratospheric Chemistry
Week 03	The Ozone Layer
Week 04	Ozone Holes
Week 05	The Chemistry of Ground-Level Air Pollution
Week 06	The Detailed Chemistry of the Atmosphere
Week 07	The Environmental and Health Consequences of Polluted Air – Outdoors and Indoors
Week 08	Mid-term Exam
Week 09	The Greenhouse Effect
Week 010	Fossil-Fuel Energy, O ₂ Emissions, and Global Climate change
Week 011	Renewable Energy, Alternative Fuels, and the Hydrogen Economy
Week 012	Radioactivity, Radon, and Nuclear Energy
Week 013	Water Chemistry and Water Pollution
Week014	Toxic Heavy Metal
Week 015	Toxic Heavy Metal
Weel016	Final Exam
Weel017	Specific Topic Lecture by students
Weel018	Specific Topic Lecture by students