



課 綱 Course Outline

自然資源與環境學系學士班

中文課程名稱 Course Name in Chinese	環境化學				
英文課程名稱 Course Name in English	Environmental Chemistry				
科目代碼 Course Code	NRES20050	班 別 Degree	學士班 Bachelor's		
修別 Type	學程 Program	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite					
課程目標 Course Objectives					
1. 認識基本的環境議題。 2. 學習環境議題相關的化學知識。 3. 提昇環境與化學的整體概念					
系教育目標 Dept.'s Education Objectives					
1	培養兼具國際視野與本土關懷的學生 To develop students who care about local issues and have an international perspective				
2	培養具備自然科學與社會科學知識的人才 To educate students to have knowledge of both the natural and social sciences				
3	培養具備環境倫理與人文素養的環境公民 To teach students to be environmental citizens (i.e., knowledgeable about environmental ethics and human issues)				
系專業能力 Basic Learning Outcomes				課程目標與系專業能力 相關性 Correlation between Course Objectives and Dept.'s Education Objectives	
A	具備自然科學與社會科學的基礎知識 To be knowledgeable of fundamental theories in the natural and social sciences.				●
B	具備觀察、理解、闡釋自然環境與人類社會互動及變遷關係的能力 To be able to observe, understand, and interpret the changing interactions of natural resources and human society.				○

C	具備多元資料收集策略、閱讀論文、撰寫環境報導及創意口頭報告的能力 To have the ability to collect data, understand scientific literature, and write and present environmentally related reports.	
D	能終身學習、對環境維持熱情、關懷、並願意做出對在地環境獻身的承諾 To cultivate the values of lifelong learning, to maintain enthusiasm and concern for the environment, and to develop commitment to the local environment.	
E	具備環境倫理觀、社會責任感與社會實踐力 To develop and implement environmental ethics and social responsibility.	
F	具備獨立思考、溝通協調與團隊合作的能力 To think independently, to communicate effectively, and to cooperate with others as a team.	●
G	具備基本外國語文能力 The be able to communicate in a foreign language.	○

圖示說明Illustration：● 高度相關 Highly correlated ○ 中度相關 Moderately correlated

### 課程大綱

#### Course Outline

本課程的教學對象為環境科系學生或有興趣者，希望協助學生認識並瞭解環境化學的相關知識。理論部份以化學熱力學、化學動力學、水溶液之酸-鹼平衡等為主；議題部分以核反應、燃料電池、高分子與塑膠、藥物設計、食品營養、基因化學等為主，介紹與議題相關的基礎化學知識。教學方法包含教師課堂講授、學生習作練習及學生小組討論報告等。

資源需求評估(師資專長之聘任、儀器設備的配合．．．等)

Resources Required(e.g. qualifications and expertise, instrument and equipment, etc.)

投影機、幻燈機、個人電腦數台、相關電腦軟體。

### 課程要求和教學方式之建議

#### Course Requirements and Suggested Teaching Methods

### 其他

#### Miscellaneous

#### 參考資料

1. American Chemical Society. Chemistry in context, 6rd ed., 2009, McGraw-Hill. (歐亞書局代理)
2. Zumdhal, Steven S. Chemical Principles, 6rd ed., 2007, Houghton Mifflin.
3. 相關閱讀資料

規劃負責老師：

單位主管：

系課程委員會審議通過日期：