

# 國立中興大學 通識課程 教學大綱

## Syllabus of NCHU General Education Course

課程名稱 course name	(中) 自然碳匯理論與實務				
	(Eng.) - Theory and Practice of Natural Carbon Sinks				
開課系所班級 dept. & grade	通識教育中心 General Education Center	學分 credits	2	規劃教師 teacher	趙國容
課程屬性 course type	必修 compulsory	授課語言 language	中文或英文 Chinese/English	開課學期 semester	上或下 fall or spring
課程分類 course classification	109 學年度前入學新生適用		自然領域－環境科學學群		
	110 學年度起入學新生適用		統合領域－專業實作		
課程簡述 course description	(中) 在人類大量使用化石能源的影響下，地球上的氣候已有所改變。為了減低氣候變遷對人類的影響，自然碳匯為重要的關鍵策略之一。本課程將介紹自然碳匯的理論基礎以及如何估算自然碳庫的碳儲存、碳吸收與碳排放。並結合實作與執行專案，增進學生對自然碳匯實作的了解。				
	(Eng.) The extensive use of fossil fuels by humans has altered the Earth's climate. To mitigate the effects of climate change on humanity, leveraging natural carbon sinks is a crucial strategy. This course will cover the theoretical basis of natural carbon sinks and methods for estimating the carbon storage, sequestration, and emissions associated with natural carbon pools. Additionally, it will integrate hands-on activities and project implementation to deepen students' practical knowledge of natural carbon sinks.				
教學目標 course objectives	(中) 1. 了解自然碳匯的重要性與當前政策 2. 設計與執行自然碳匯專案 3. 分析自然碳匯資料 4. 撰寫自然碳匯成果專案報告				
	(Eng.) 1. Understanding the importance of natural carbon sinks and contemporary policies 2. Designing and implementing a measurement project of a natural carbon pool 3. Analysing data from the natural carbon pool projects 4. Compiling a project report on a nature carbon pool				

<b>先修課程 prerequisites</b>	無 None				
<b>六項核心能力配比 (加總為 100%) The 6 core learning outcomes add up to 100%</b>					
人文素養	科學素養	溝通能力	創新能力	國際視野	社會關懷
0%	60%	10%	0%	20%	10%
Humanities Literacy	Scientific Literacy	Communication Skills	Innovative Ability	International Perspective	Social Concerns
<b>教學方法 teaching methods</b>			<b>學習評量方式 evaluation</b>		
Lectures, discussions, presentations, practicum			Class discussion 10%, exam 30%, projects 20%, oral presentations 20%, and assignments 20%		
<b>授課內容 (單元名稱與內容、習作/考試進度) course contents and homework/tests schedule</b>					
Week 1: Introduction Week 2: The science of carbon cycle Week 3: Ecosystems as carbon sinks Week 4: Policies and global agreements Week 5: Climate Change Policy in Taiwan Week 6: Carbon inventory project development, implementation, and monitoring Week 7: Methods for estimating aboveground biomass and belowground biomass Week 8: Methods for estimating dead organic matter and soil Week 9: Mid-term exam Week 10: Project Proposal I Week 11: Project proposal II Week 12: Practicum and data collection I (實作) Week 13: Practicum and data collection II (實作) Week 14: Final project presentations I Week 15: Final project presentations II Week 16: Practical challenges and solutions Week 17: Self-learning activities Week 18: Self-learning activities					
<b>教科書與參考書目 (書名、作者、書局/代理商...) textbooks &amp; other references (title, author, publisher...)</b>					
Ravindranath, N.H. and Ostwald, M., 2008, Carbon Inventory Methods: Handbook for Greenhouse Gas Inventory, Carbon Mitigation and Roundwood Production Projects. Springer					
<b>課程教材 (教師個人網址請列在本校內之網址) teaching aids &amp; teacher's website</b>					
iLearning					
<b>課程輔導時間 office hours</b>					
另行公告					

