



課 綱 Course Outline  
通識教育中心學士班

中文課程名稱 Course Name in Chinese	氣候變遷科學基礎				
英文課程名稱 Course Name in English	Fundamentals of Climate Change Science				
科目代碼 Course Code	GC__67710	班 別 Degree	學士班 Bachelor' s		
修別 Type	選修 Elective	學分數 Credit(s)	2. 0	時 數 Hour(s)	2. 0
先修課程 Prerequisite					
課程目標 Course Objectives					
Global climate change is one of the main threatens to human beings and Earth' s ecosystems in the 21st century. This course is aiming in providing students from different fields with the fundamental sciences of climate change, the impacts of and adaptation to climate change.					
(校)教育目標 Objectives of General Education					
1	在地關懷與全球視野 Develop domestic and global perspectives				
2	人文素養與科學知識 Achieve humanistic values and scientific literacy				
3	全人健康與永續創新 Holistic Wellness and Sustainable Innovation				
(校)核心能力 Learning Outcomes				課程目標與校核心能力相關性 Correlation between Course Objectives and Basic Learning Outcomes	
A	自主學習與創新思考 Autonomous Learning and Creative Thinking			○	
B	康健身心 Physical Fitness and Mental Balance			○	
C	互動、溝通與解決問題 Interactive Communication and Problem Solving			●	
D	情藝美感 Artistic Feeling and Aesthetic Perception			○	

E	文化素養與尊重差異 Cultural Literacy and Respect for Differences	●
F	在地關懷與公民責任 Local Commitment and Civic Responsibility	●
圖示說明Illustration：● 高度相關 Highly correlated ○ 中度相關 Moderately correlated		
課程大綱 Course Outline		
1. General introduction 2. Climate and the factors shaping the Earth' s climate system 3. Global energy budget 4. Global hydrological cycle 5. Global carbon budget 6. The human contribution to climate change 7. Meteorological consequences of climate variability and change 8. Ecological consequences of climate variability and change 9. Mitigation and Adaptation 10. Global emission scenarios and Net Zero by 2050		
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.)		
Funding for field excursion.		
課程要求和教學方式之建議 Course Requirements and Suggested Teaching Methods		
Lectures (80%) Discussion (20%) Field excursion to research site in Hualien (optional)		
其他 Miscellaneous		
IPCC. (2021). Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change: Cambridge University Press. IPCC. (2022). Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge, UK and New York, USA: Cambridge University Press. IPCC. (2022). Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge, UK and New York, NY, USA: Cambridge University Press.		