國立東華大學

課　綱　Course Outline

環境學院學士班

中文課程名稱 Course Name in Chinese	地球科學概論				
英文課程名稱 Course Name in English	Introduction to Earth Sciences				
科目代碼 Course Code	CES_10800	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

地球科學的學科範圍包括地球的內部、地表的陸地與海洋，圍繞地球的大氣及氣圈以外的太空等的組成、結構、分佈規律、相互關係及其發展變化的科學。本課程希望透過對地球系統(包括大氣圈、海洋圈、地圈、生物圈)的介紹及相互關係的探討，並進一步對現代地球科學最重要的理論-板塊構造運動學說的說明，以及對地質時間、氣候系統、水文循環與地下水、地震與地球內部探索地球物理的介紹，以及人類對地球環境的衝擊等內容的介紹，使修習學生瞭解地球科學與人類之間的關係，並能在未來依據所學促進人類福祉，並達成永續發展的目標。

院教育目標
College.'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.).

	院基本素養與核心能力 College Basic Learning Outcomes	課程目標與院基本素養與核心能力 Correlation between Course Objectives and Basic Learning Outcomes
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

1. Brief Introduction
2. The Earth System
3. Plate Tectonics: The Unifying Theory
4. Geologic Time
5. The Climate System
6. Hydrologic Cycle and Groundwater
7. Introduction to Geophysics
8. Earthquakes
9. Exploring Earth’s Interior
10. The Human Impact on Earth’s Environment

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.)

本系所專任擔任。需手提電腦、投影機。

課程要求和教學方式之建議
Course Requirements and Suggested Teaching Methods

課程講授與討論，野外考察與報告撰寫。

其他
Miscellaneous

教科書：

Grotzinger, J. and Jordan. T. (2010) Understanding Earth (6th edition). W. H. Greeman an d Company, New York.

其他參考書目

1.Skinner, B. J.and Porter, S. C. (2000) The Dynamic Earth: An Introduction to Physical Geology. 4th Edition. John Wiley and Sons. U.S.A. 575 pp.
2.何春蓀，1981，普通地質學，國立編譯館。台北。五南圖書出版公司。
3.Ernst, W.G. (Ed.) (1999) Earth Systems:Processes and Issues. Cambridge University Press, UK.

規劃負責老師：　　單位主管：

系課程委員會審議通過日期：