



## 課 綱 Course Outline

自然資源與環境學系碩士班國際組

中文課程名稱 Course Name in Chinese	氣候變遷與永續發展專題				
英文課程名稱 Course Name in English	Climate Change and Sustainability				
科目代碼 Course Code	NRESM0260	班 別 Degree	碩士班 Master' s		
修別 Type	選修 Elective	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite	None				
課程目標 Course Objectives					
<p>The course objective is to provide to graduate students the conceptual apparatus necessary to understand the different aspects of Sustainability. It will introduce different theoretical points of view of the problem and not be limited to a simply to the technical and empirical dimensions of the issue.</p> <p>The course objective is also to help graduate students to read English papers addressing theoretical issues. The course taught in English and in Mandarin will pay attention to graduate students' English proficiency.</p> <p>At the end of the course, graduate students should be identify the different dimensions (demographic, economic, sociological, political, cultural and epistemological) of the debate of sustainability. They should also realize the complexity of the issue and its human and ethical dimensions: what is to live a life which is sustainable?</p>					
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	能覺知多元的自然科學與社會科學理論並具備研究能力 To have knowledge of natural and social science theories.	●
B	具備自然資源與人類社會議題之調查分析、規劃與經營之能力 To be able to investigate, analyze, plan, and manage both natural resource and human social issues.	○
C	具備將環境倫理與生態思想落實於永續性生活型態的能力 To implement sustainable lifestyles based on environmental ethics and ecological principles.	●
D	能以整全式的觀點來解析環境問題，並具備發展系統性解決方案的能力 To resolve environmental issues and develop systematic solutions with a global perspective.	○
E	具備系統分析、未來思考、溝通協調與團隊合作的能 The ability to analyze, plan, communicate, and coordinate with others (teamwork)	○
F	具備終身學習、國際視野與外語溝通的能力 To instill the values of lifelong learning, an international perspective, and the ability to communicate in a foreign language.	○

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

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This course will be based on the following theoretical hypothesis: the meaning of sustainability can be grasped only with regard to what unsustainable development really means and actually implied. Our point will be that assessing the potential causes and consequences of unsustainability is necessary to understand and clarify the problems that sustainability is supposed to address. Only the precise diagnosis of the unsustainability-disease could efficiently lead to the fabrication of the adequate sustainable-cure.

The course will thus propose an overview of the economic, political, cultural, and epistemological causes from which unsustainability emerged. What are the causes of the unsustainable mode of development that lead to Climate Change? What makes human social and economic development of the last two centuries unsustainable? Indeed we all know that, in the hypothesis of an anthropologically-driven Climate Change, industrial development is the main factor of environmental degradation. But why it is the case? What is unsustainable in the mode of development that started from the industrial revolution? Demography: the fact they are too many people for too few resources? Socio-politics: the fact that the distribution of social and ecological capital is not fair? Cultural; the fact that European industrialized countries have no deep understanding of "nature"? Epistemological: the fact that the paradigm on which industrial revolution is based contradict with an ecologically friendly mode of development?

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.)

There are no required textbooks for this course. Rather, the teaching team has assembled a collection of key readings that will form the core required material. These readings are listed below. In addition, other readings may be announced in the class throughout the semester. You will be expected to complete all assigned readings and provide summaries of these as part of your course assessment. N.B.: The assigned readings are in the English language. However the course itself will be taught both in Chinese and in English.

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

Your attendance at all class sessions is expected. If for some unforeseen reason you miss a class, it is your responsibility to obtain notes from your classmates. Assessment will also include requirements for active participation in weekly discussions, as well as an assigned role as discussion leader for one week.

其他  
Miscellaneous

Reading List

- Rockstrom, J., & al., “A safe operating space for humanity” , Nature, 2009, 461
- Gonzalez, P. (2010). Impacts of Climate Change on Terrestrial Ecosystems and Adaptation Measures for Natural Resource Management. In: Changing Climates, Earth Systems and Society (ed. Dodson), New York, Springer: 5-20.
- Lee Liu, “Living within One’ s Own Ecological Means” , Sustainability, 2009, 1, 1412-1430
- Paul Robbins, John Hintz and Sarah A. Moore (2010). “Population and Scarcity” & Political Economy.” In Environment and Society: A Critical Introduction, Chapter 2 & 7. Wiley-Blackwell.
- Tu, Wei-ming (2001). “The Ecological Turn in New Confucian Humanism: Implications for China and the World.” Daedalus 130(4): 243-264.
- Ulanowicz, R. E. (2000) “Life after Newton: An Ecological Metaphysic.” In The Philosophy of Ecology. From Science to Synthesis (ed. Keller & Golley), London: University of Georgia Press. : 81-100.
- Shove, E. (2010) “Beyond the ABC: climate change policy and theories of social change” , Environment and Planning A, 42: 1273-1285
- Stenmark, M. (2007). Science, Religion, and Sustainable Development. In Science, Religion and Society: an Encyclopedia of History, Culture and Controversy (ed. Eisen & Laderman), London: M.E. Sharpe: 506-513.
- Bruno Latour, Politics of Nature, Cambridge: Harvard University Press, 2001, 1. Why Political Ecology Has to Let Go of Nature, pp. 9-58
- McDonough, W. & Braungart, M. (2002) Cradle to Cradle, Remaking the ways we make things, North Point Press, (193 p.), chap 1.
- Tim Jackson Prosperity without growth? The transition to a sustainable economy, London: Sustainable Development Commission, 2010, chap 5.
- Holmes Rolston III, “Value in Nature and the Nature of Value” , in R. Attfield, & A. Belsey, Philosophy and the Natural Environment, Cambridge University Press, 1994, pp. 13-30