



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	環境科學概論			學年/學期 Academic Year/Semester	113-1
課程名稱(英文) Course Name in English	Introduction of Environmental Science				
科目代碼 Course Code	CES_10400	系級 Department & Year	學士班	開課單位 Course-Offering Department	自然資源與環境學系 Department of Natural Resources and Environmental Studies
修別 Type	選修	學分數/時間 Credit(s)/Hour(s)	3/3	先修課程 Prerequisite	無
授課教師 Instructor	吳海音 (Hai-Yin Wu), B348, hywu@gms.ndhu.edu.tw 蘇銘千 (Ming-Chien Su) B449, mcsu@gms.ndhu.edu.tw				
助教	黃梅君 611254043@gms.ndhu.edu.tw ?				
Office Hour	Tue. 12:00~14:00, or by appointment				

課程描述 Course Description

引導學生認識、了解「環境」、「生態」，進而由關鍵性之科學思考訓練來分析人類與環境之關係，學習以基礎之生物、物理及化學原則探討環境及生態系統之運作。探討環境問題由其導因及影響，進而探索解決方案。內容由學習科學方法開始，進入生態系統之認識，對各項自然資源、環境問題含人口、食物、能源、污染、生物多樣性、全球暖化與環境變遷議題之熟悉。期望培養學生以科學方法探索人類文化發展及環境之關係，同時啟發學生對學習環境議題之興趣與方法。

課程目標 Course Objectives

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?

授課進度表 Teaching Schedule & Content				
Week	Date	內容 Subject/Topics	Group Presentation	Instructor
1	09/10-11	Introduction Course logistics: Participation, assignments, grading, peer review, group discussion, final project, and office hour		Hai-Yin Wu Ming-Chien Su
2	09/17-18	CH3: Ecosystems and Energy CH4: Ecosystems and the Physical Environment		Hai-Yin Wu
3	09/24-25	CH5: Ecosystems and Living Organisms CH6: Major Ecosystems of the World	Group1 (W2)	Hai-Yin Wu
4	10/01-02	CH14: Soil Resource CH8: The Human Population	Group2 (W3)	Hai-Yin Wu
5	10/8-9	CH9: The Urban Environment	Group3 (W4)	Hai-Yin Wu
6	10/15-16	EXAM I CH16: Biological Resources	Group4 (W5)	Hai-Yin Wu
7	10/22-23	CH17: Land Resources		Hai-Yin Wu
8	10/29-30	CH18: Food Resources	Group5 (W7)	Hai-Yin Wu
9	11/05-06	CH22: Pest Management EXAM II	Group6 (W8)	Hai-Yin Wu
10	11/12-13	CH 13 & CH21 Water: A Limited Resource/Water Pollution	Group7 (W9)	Ming-Chien Su
11	11/19-20	CH 19 Air Pollution & Climate Change Global Climate Change Carbon Neutrality	Group8 (W10)	Ming-Chien Su
12	11/26-27	CH 23 Solid and Hazardous Wastes & Living Sustainably		Hai-Yin Wu Ming-Chien Su
13	12/3-4	EXAM III Warp up Water, Air, Material Sustainability 12/03 Field Excursion with assignments	Group9 (W12)	Ming-Chien Su
14	12/10-11	CH 7 Human Health and Environmental Toxicology	Group10 (W13)	Ming-Chien Su
15	12/17-18	CH10 & CH11: Energy consumption and Fossil Fuels CH12: Renewable Energy and Nuclear Power	Group11 (W14)	Ming-Chien Su
16	12/24-25	Warp up Wellbeing, Energy & Net Zero	Group12 (W15)	Ming-Chien Su
17	12/31-1/1	EXAM IV Environmental Fate Studies Lab Tour		Ming-Chien Su
18	1/7-8			

教學策略 Teaching Strategies
■Lecture ■Group Discussion ■Field Trip ■Miscellaneous:
學期成績計算及多元評量方式 Grading & Assessments
Participations, Class Activities: 10% Case Study(3 Qs for class): 10% Assignments & Quizzes(total): 20% EXAM I, II, III, IV: 60%

評量方式補充說明

Grading & Assessments Supplemental instructions

All the students must engage with the class discussion, plus each section assignments(including reports and/or presentation) and discussion on the topics of their own choice.

A 10 to 20 pages of **case study report** (1.5 spacing, 12 font) on a course-related topic is required, and upload it to the e-learning before the required date (TBA).

課程預期效益

This course targets to the interests of students from Colleges of Environmental Studies, Indigenous Studies, and Social Sciences. The collaboration among these disciplines and academic fields would be the greatest benefit from this course. The dialogue between scientific view and social view on environmental sustainability will also provide better training for the students whom are interested in doing related and applied works in government institutes, NGOs and academic environment.

教科書與參考書目 (書名、作者、書局、代理商、說明)

Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)

● Text Book:

- Environment, 10th Edition, David M. Hassenzehl, Mary Catherine Hager, Nancy Y. Gift, Linda R. Berg, Peter H. Raven, 2018, ISBN: 978-1-119-39341-2

- Handouts

Reference

● 『如何閱讀原文書』參考網頁

1. 主題：如何閱讀原文書，符碧真教授（國立臺灣大學師資培育中心主任）
<http://speech.ntu.edu.tw/ntuspeech/Video/id-1524>
2. 和英文談戀愛，奚永慧教授（臺大外文系），<http://speech.ntu.edu.tw/ntuspeech/Video/id-81>
3. 如何閱讀原文書/林千哲教授。<http://ocw.lib.ntnu.edu.tw/course/view.php?id=74>
4. 筆記技巧，石美倫博士，<http://speech.ntu.edu.tw/ntuspeech/Video/id-2015>

● Case Study Report & Presentation：

- **Case Study Group presentation: 15 minutes Oral presentation, and 10 minutes discussion**
- **4 pages of the case study report (Font:13, single space); 12 pages of presentation (excluded cover page); Cover pages：Topic, names of the group members, Contribution, date,**
- **Content: Thinking Environmentally & Making a Difference, 2 questions for discussion, reference**
- **File: Word/PowerPoint，**
- 由各小組配合每週上課主題的 Critical Thinking(報告前一週由老師指定議題)共同討論二大方向（Thinking Environmentally & Making a Difference），分工撰寫書面報告及簡報，**每一組推派一人報告及提出 2 個討論問題（各組 10 分鐘報告，5 分鐘帶領討論）**（需經過閱讀消化自己撰寫，勿直接剪貼網頁資料。若以英文撰寫酌予加分）。
- 請於報告當週的星期一下午 4 點前將書面及簡報上傳至 e 學院；報告結束後；修正或補充，請在報告後隔週的星期日下午四點前將其修正檔案上傳至 e 學院。

● Assignments

- **File name：example: 20240928-G1-CH4.docx, 2024-G1-CH4.ppt; 20241105-Ming-Chien Su-HW1.doc**
- **存檔類型：Word/PowerPoint 文件/簡報**
- **檔名：日期-組別/姓名-主題/作業.副檔名；例如：20241201-第一組-碳捕獲的重要性.ppt，20241201-銘干-校外參訪心得.doc**