

Tamkang University Academic Year 111, 2nd Semester Course Syllabus

Course Title	EARTH'S ECOSYSTEMS AND ENVIRONMENT	Instructor	CHANG PAO-HSING
Course Class	TNUZB0G GLOBAL TECHNOLOGY REVOLUTION, 0G	Details	<ul style="list-style-type: none"> ◆ General Course ◆ Required ◆ One Semester
Relevance to SDGs	SDG7 Affordable and clean energy SDG8 Decent work and economic growth SDG12 Responsible consumption and production SDG13 Climate action		
Departmental Aim of Education			
Students will understand recent development of modern science and technology and its impact on human society and global environment. Through the design of course students will also be familiar with broadly-based fundamental technical knowledge and improve.			
Subject Schoolwide essential virtues			
<ol style="list-style-type: none"> 1. A global perspective. (ratio:20.00) 2. Information literacy. (ratio:10.00) 3. A vision for the future. (ratio:20.00) 4. Moral integrity. (ratio:10.00) 5. Independent thinking. (ratio:10.00) 6. A cheerful attitude and healthy lifestyle. (ratio:10.00) 7. A spirit of teamwork and dedication. (ratio:10.00) 8. A sense of aesthetic appreciation. (ratio:10.00) 			
Course Introduction	This course introduces the following topics: the beauty of ecological system, from the creation process to the structure including all species and their functional relationships; the cause of global warming effect and its impacts on nature and on human society; futurology; environmental ethics; multi-objective decision making; risk management; rational thinking under uncertain and high consequence states; environmental economics; incentive-based economic methods for pollution reduction.		

The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.

Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.

I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.

II. Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.

III. Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.

No.	Teaching Objectives	objective methods
1	This course introduces the following topics: the cause of global warming effect and its impacts on nature and on human society; futurology; environmental ethics; multi-objective decision making; risk management; rational thinking under uncertain and high consequence states; environmental economics; incentive-based economic methods for pollution reduction.	Affective

The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1		12345678	Lecture, Discussion, Publication	Testing, Report(including oral and written), Activity Participation

Course Schedule

Week	Date	Course Contents	Note
1	112/02/13~ 112/02/19	課程簡介	
2	112/02/20~ 112/02/26	來之不易的美麗地球	
3	112/02/27~ 112/03/05	台灣氣候變遷調適概念圖(危害與衝擊、調適管理)	
4	112/03/06~ 112/03/12	決策與風險觀念	
5	112/03/13~ 112/03/19	溫室效應造成氣候變遷的趨勢介紹、水土資源問題、海水酸化造成海洋生態破壞與海產資源耗竭問題、水傳播疾病(water borne disease)、堆肥教學單元	
6	112/03/20~ 112/03/26	糧食危機：改變國人飲食習慣，多吃稻米以降低糧食危機風險、影片欣賞：糧食危機、建立綠色蔬果屋頂教學單元	

7	112/03/27~ 112/04/02	環境經濟學基本觀念、改變消費行為的環保運動單元：拒用(refusing)·例如：倡導自備容器及拒用飲料與礦泉水、推廣綠色行動單元：不坐電梯、大台北地區需不需要有汽車?節約用水(水足跡的計算)、建立綠色蔬果屋頂教學單元	
8	112/04/03~ 112/04/09	環境經濟學基本觀念、水與水權的戰爭單元·影片欣賞：水的戰爭、美國水權的戰爭、建立綠色蔬果屋頂教學單元。學期個人及小組報告：繳交日為期中考前兩星期之上課時間。遲交者為零分。	學期報告：繳交日為期中考前兩星期之上課時間。遲交者為零分。
9	112/04/10~ 112/04/16	環境經濟學基本觀念、公地的悲劇(tragedy of the common)	
10	112/04/17~ 112/04/23	Midterm Exam Week	
11	112/04/24~ 112/04/30	環境倫理簡介	
12	112/05/01~ 112/05/07	環境倫理簡介	
13	112/05/08~ 112/05/14	環境倫理簡介	
14	112/05/15~ 112/05/21	環境倫理簡介	
15	112/05/22~ 112/05/28	水資源問題：水庫淤積(石門水庫)、水權調配問題·影片欣賞：中科四期、討論氣候變遷調適的阻力與解決方案單元、建立綠色蔬果屋頂教學單元	
16	112/05/29~ 112/06/04	海平面上升：吐瓦魯(Tuvalu)、乾旱的衝擊：北京沙漠化、上海北京南水北調、非洲綠色長城計畫、非洲地區淡水資源的質與量、台灣濁水溪沙漠化	
17	112/06/05~ 112/06/11	環境教育法、永續發展政策綱領、國家氣候變遷調適政策綱領、與國土空間發展策略計畫	
18	112/06/12~ 112/06/18	Final Exam Week	
Requirement		<p>1.本課程期待同學以積極態度參與學習。課程內容有連慣性，三次缺席視為嚴重違規，不但喪失期末調整分數的資格，並同時取消課堂中所有個人累積之學期分數，因此很容易被當。</p> <p>2.教材內容多為英文撰寫，且考試多為英文出題，請同學們選修時三思。</p> <p>3.禁止求情與通融，絕無特殊考量：無論大三、大四、延畢生、或考上研究所但只差這科就畢業者，成績計算方式一律相同。</p> <p>4.學期個人及小組報告：繳交日為期中考前兩星期之上課時間。遲交者為零分。</p> <p>5.學期小組報告：鼓勵多目標主題之探討，成立多人小組後，於課堂中進行集體討論、分享人生哲理、心得交流、及提出解決問題之規劃與具體實踐之行動方案。期末考前兩星期之上課時間繳交一份小組報告，並獲得額外之學期分數；若遲交則整組為零分。此小組報告之題目與組員必須獲得老師之同意。歡迎有興趣及熱心的同學加入。</p>	
Teaching Facility		Computer, Projector	
Textbooks and Teaching Materials		所有的講義與教材都放在「iClass學習平台」以及「教學支援平台」	

References	<p>Miller, G. Tyler, "Environmental Science: Working with the Earth" , 8th ed., Brooks/Cole, 2001.</p> <p>Environmental Economics & Management: Theory, Policy, and Applications, 6th ed., Callan/Thomas, 2013. (滄海書局)</p> <p>Graedel, T.E., Allenby, B.R., "Industrial Ecology" , Prentice Hall, 1995.</p> <p>Des Jardins, Joseph R., "Environmental ethics: an introduction to environmental philosophy" , Wadsworth, 1993.</p>
Number of Assignment(s)	(Filled in by assignment instructor only)
Grading Policy	<p>◆ Attendance : % ◆ Mark of Usual : % ◆ Midterm Exam : %</p> <p>◆ Final Exam : 50.0 %</p> <p>◆ Other 〈 學期報告 〉 : 50.0 %</p>
Note	<p>This syllabus may be uploaded at the website of Course Syllabus Management System at http://info.ais.tku.edu.tw/csp or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at http://www.acad.tku.edu.tw/CS/main.php .</p> <p>※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</p>