

## 課程綱要 Course Syllabus

開課系所 Class/Department : Institute of Natural Resource Management/ International Program on Urban Governance

課程中文名稱 Title of course in Chinese : 生態學原理

課程英文名稱 Title of course in English : Principles of Ecology

授課教師 Instructor : 王之佑

應修系級 Major : 資源博 1 資源博 2 資源碩 1 資源碩 2

選修類別 Type of Credit : 必修 Required 選修 Elective

全半學年 Whole or Half Academic Year : 全學年 Whole 半學年 Half

學分 Credit(s) : 3 時數 Hour(s) : 3

教師網址 Instructor's Website : <http://sites.google.com/a/gm.ntpu.edu.tw/cywang/>

先修科目 Prerequisites : No

教學目標 Course Objectives :

The goal of this course is to provide students with the essential knowledge of ecology needed for managing environment and natural resource. After successfully completing this class, students should be able to understand:

- Principles of sustainability
- The importance of biodiversity and ecosystem service
- Explain basic ecological concepts, including movement of energy and nutrients through ecosystems, and responses of individual organisms to their environment.
- Use scientific vocabulary relevant to ecology

內容綱要 Course Outline :

1. Environment and Sustainability
2. Ecosystem: the definition and energy/mass flow
3. Biodiversity and evolution
4. Species interaction, ecological succession, and population control.
5. Climate change and biodiversity
6. Terrestrial biodiversity
7. Aquatic biodiversity

學生核心能力權重 Student's Core Competence Index:

\*校定核心能力：八項加總為 100%，不需每項均填寫，惟至少需填一項

項目 Item	創意思考與問題解決 Creative thinking and Problem-solving	綜合統整 Comprehensive integration	溝通協調 Communication and Coordination	團隊合作 Teamwork
權重 Weight	20%	%	15%	15%
項目 Item	誠信正直 Honesty and Integrity	尊重自省 Self-Esteem and Self-reflection	多元關懷 Caring for Diversity	跨界宏觀 Interdisciplinary Vision
權重 Weight	%	20%	15%	15%

\*系定核心能力及權重：(請依照系所訂定之核心能力及課程權重簡述如下)

教學進度 Teaching Schedule :

週別 Weekly Schedule	教學預定進度 Tentative teaching schedule	教學方法與教學活動(可複選) Teaching Methods and activities
Week 1	Course Introduction	講授 Lecture
Week 2	Ch.1: Environmental Problems, Their	講授 Lecture

	Causes, and Sustainability (I)	
Week 3	Ch.1: Environmental Problems, Their Causes, and Sustainability (II)	講授 Lecture
Week 4	Ch.2: Science, Matter, Energy, and Systems	講授 Lecture
Week 5	Ch.3: Ecosystems: What Are They and How Do They Work? (I)	講授 Lecture
Week 6	Ch.3: Ecosystems: What Are They and How Do They Work? (II)	講授 Lecture
Week 7	Ch.4: Biodiversity and Evolution (I)	講授 Lecture
Week 8	Ch.4: Biodiversity and Evolution (II)	講授 Lecture
Week 9	Midterm Exam (Ch.1~4)	講授 Lecture
Week 10	Field trip	講授 Lecture
Week 11	Special topic: climate change and adaption	講授 Lecture
Week 12	Ch.5: Biodiversity, Species Interactions	講授 Lecture
Week 13	Ch.5: Population Control	講授 Lecture
Week 14	Ch.7: Climate and Biodiversity (I)	講授 Lecture
Week 15	Ch.7: Climate and Biodiversity (II)	講授 Lecture
Week 16	Ch.8: Aquatic Biodiversity (I)	講授 Lecture
Week 17	Ch.8: Aquatic Biodiversity (II)	講授 Lecture
Week 18	Final presentation	講授 Lecture

評量方式 Evaluation Methods : (各項成績請填百分比; 合計 100%)

平時成績 Regular grades	%	期中成績 Mid-term grades	%	期末成績 Final grades	%
<input checked="" type="checkbox"/> 出席率 Participation <input checked="" type="checkbox"/> 數位學苑作業與討論 Digital classroom assignment and discussion <input checked="" type="checkbox"/> 課堂討論 Class discussion <input checked="" type="checkbox"/> 平時作業 Regular assignment <input type="checkbox"/> 平時考試 Regular test <input type="checkbox"/> 其他 Others : _____		<input checked="" type="checkbox"/> 期中考 Mid-term <input type="checkbox"/> 書面報告 Written report <input type="checkbox"/> 口頭報告 Oral report <input type="checkbox"/> 其他 Others : _____		<input type="checkbox"/> 期末考 Final <input checked="" type="checkbox"/> 書面報告 Written report <input checked="" type="checkbox"/> 口頭報告 Oral report <input type="checkbox"/> 其他 Others : _____	

指定用書 Required Texts :

Living in the Environment 19/E , Miller, G. T. and Spoolman, S. E. 。 [ISBN:9781337094153]

參考書目 Reference Books :

其他參考資料 Other References :