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國立高雄科技大學
NATIONAL KAOHSIUNG
UNIVERSITY OF SCIENCE
AND TECHNOLOGY
授課大綱 Syllabus

部別：日間部博士

112學年度第2學期

列印日期：2024/03/01

中文課程名稱：海洋生態工程	英文課程名稱：Marine Ecological Engineering	授課教師：狄蘿莉
開課班級：水產科技博班一甲	學分：3.0	授課時數：3.0
合班班級：		實習時數：0.0

1. 中文教學目標(Chinese Teaching objectives)
The major objective is to present the overall concepts of marine pollution and it is an interesting course for students who are looking to expand into marine ecology, sustainability and environmental management.

2. 英文教學目標(English Teaching objectives)
1. Understand marine ecology, environment and sustainability 2. Understand the effects of pollution on marine ecosystems and habitat destruction 3. Understand the natural bio-geo chemical cycles and the effect of Anthropocene 4. Climate change mitigation in marine systems

3. 中文教學綱要(Chinese CourseDescription)
Ecology and ecosystems - definition and concepts, Habitat and ecological Niche, Ecological productivity and trophic levels, Biotic and abiotic communities, Biogeochemical Cycles and nutrient flow, Ecological Pyramids, Ecological indicators. Coastal ecosystems - estuaries, wetlands and mangroves, Intertidal zone. Environmental stresses on marine ecosystem. Climate change, global warming, Ocean acidification, diseases and infections, overfishing, maintenance of ecosystem diversity, habitat destruction prevention, Conservation of endangered species - parks and sanctuaries, Artificial reefs

4. 英文教學綱要(English CourseDescription)
This course will help students to understand the importance of the maintenance of ecological balance and highlight the need for sustainable development which is the major bottleneck linked to the global economic development.

5. 中文核心能力		
	核心能力名稱	核心能力百分比
1	生物資源永續	25%
2	產銷管理能力	25%
3	整合與研究能力	25%
4	創新溝通能力	25%

6. 英文核心能力		
	核心能力名稱	核心能力百分比
1	Biological resource sustainability	25%
2	Production and sales management capabilities	25%
3	Integration and research skills	25%
4	Innovative communication skills	25%

7. 教科書

中文書名： 英文書名：Marine Ecology Processes, Systems, and Impacts

中文作者： 英文作者：Michel J. Kaiser, Martin J Attrill, Simon Jennings, and David Thomas

1 中文出版社： 英文出版社：Oxford Academic Press

出版日期：2020年 月 備註：

8. 參考書

中文書名： 英文書名：Marine Ecology Notes - 2nd Edition

中文作者： 英文作者：Carsten Dormann, Arne Schroeder

1 中文出版社： 英文出版社：Carsten Dormann and Arne Schroeder

出版日期：2021年 月 備註：

9. 教學進度表

週次或項目 Week or Items	中文授課內容 Chinese Course Content	英文授課內容 English Course Content	分配節次 Assigned Classes	備註 Note
1	Ecology and ecosystems - definition and concepts	Ecology and ecosystems - definition and concepts	3	
2	Habitat and ecological Niche	Habitat and ecological Niche	3	
3	Ecological productivity and trophic levels	Ecological productivity and trophic levels	3	
4	Biotic and abiotic communities	Biotic and abiotic communities	3	
5	Biogeochemical Cycles and nutrient flow	Biogeochemical Cycles and nutrient flow	3	
6	Ecological Pyramids	Ecological Pyramids	3	
7	Ecological indicators	Ecological indicators	3	
8	Coastal ecosystems - estuaries, wetlands and mangroves, Intertidal zone.	Coastal ecosystems - estuaries, wetlands and mangroves, Intertidal zone.	3	
9	9.Mid term exam	9.Mid term exam	3	
10	Environmental stresses on marine ecosystem	Environmental stresses on marine ecosystem	3	
11	Climate change and global warming	Climate change and global warming	3	
12	Ocean acidification	Ocean acidification	3	
13	Diseases and infections	Diseases and infections	3	

14	Maintenance of ecosystem diversity	Maintenance of ecosystem diversity	3
15	Habitat destruction prevention	Habitat destruction prevention	3
16	Conservation of endangered species - parks and sanctuaries	Conservation of endangered species - parks and sanctuaries	3
17	Artificial reefs	Artificial reefs	3
18	Final exam	Final exam	3

10. 中文成績評定(Chinese Evaluation method)

Mid-term - 30% Seminar presentation - 20% Assignment submission - 10% Final exam - 50%

11. 英文成績評定(English Evaluation method)

Mid-term - 30% Seminar presentation - 20% Assignment submission - 10% Final exam - 50%

12. 中文課堂要求(Chinese Classroom requirements)

None

13. 英文課堂要求(English Classroom requirements)

None

14. 本課程與SDGs相關項目(This course is relevant to these of SDGs as following)

13. 氣候行動(Climate Action);14. 水下生命(Life Below Water);

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