



課 綱 Course Outline

海洋生物研究所碩士班生物多樣性及演化組

中文課程名稱 Course Name in Chinese		生態毒理學			
英文課程名稱 Course Name in English		Ecotoxicology			
科目代碼 Course Code		MBE_54200	班 別 Degree	碩士班 Master' s	
修別 Type		選修 Elective	學分數 Credit(s)	2.0	時 數 Hour(s) 2.0
先修課程 Prerequisite					
課程目標 Course Objectives					
生態毒理學是一個從生態學角度來研究天然或人為毒性物質在環境中的流佈及對生物毒性的一門跨領域科學。本課程目標為讓學生認識生態毒理學的理论基礎及實際應用，瞭解環境毒物在環境中對各個生物系統階層的影響及可能之因應之道。					
系教育目標 Dept.'s Education Objectives					
1	研究具有本土特色與國際競爭優勢的海洋生物多樣性及演化課題 Studying the topics of marine biodiversity and evolution with both local and international significance.				
2	培養具備海洋生物多樣性知識與研發能力以及國際觀的專業人才 Training professionals with knowledge, research capability, and global perspective in marine biodiversity.				
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	培養海洋生物多樣性及演化的認知及專業能力。 Professional knowledge and skills in marine biodiversity and evolution research.				
B	具備海洋生態保育及環境保護的概念。 Concepts of conservation of marine ecology and environment.				
C	具備獨立思考邏輯思辨及問題解決能力。 Capability of thinking independently and logically and solving problems.				
圖示說明Illustration：● 高度相關 Highly correlated ○ 中度相關 Moderately correlated					
課程大綱					

Course Outline

1. Review of basic ecotoxicological principles
2. The various types, sources and environmental fate and effects of contaminants
3. Modes of toxicant uptake, transformation, storage and depuration
4. Dose/concentration-response, exposure routes
5. Factors that influence toxicity
6. Contaminant distribution, bioaccumulation, and biomagnification
7. Biomarkers of exposure and effects: Molecular to ecosystem-levels
8. Basic principles in aquatic toxicity testing
9. Common toxicity assays using invertebrates and vertebrates
10. Field case studies
11. Statistical analyses of toxicity data
12. Introduction to ecological risk assessment

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.)

課程要求和教學方式之建議

Course Requirements and Suggested Teaching Methods

其他

Miscellaneous