國立東華大學

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	生物技術原理與應用				
英文課程名稱 Course Name in English	Principle and Application of Biotechnology				
科目代碼 Course Code	MBT_56750	班 別 Degree	碩士班 Master’s		
修別 Type	必修 Required	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite					

課程目標
Course Objectives

讓學生得以認識了解生物技術相關的實驗原理與儀器操作，並進一步讓學生熟悉如何運用這些現代化生物科技的實驗技術與儀器，來討探海洋生物學的基礎與應用研究。藉由此課程可讓學生學習到海洋生物學的基礎知識、實驗操作原理，更可培育出學生的獨立操作與獨立執行研究之能力。

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

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1. Introduction 2. Pure Water System and Water Quality Assessment 3. Flow Cytometry 4. Real-time PCR 5. Optical Microscopy 6. Fluorescent Microscopy 7. Electron Microscopy 8. Lipid Extraction and Content Analysis 9. Western Blotting 10. Midterm Seminar 11. 2D Gel Electrophoresis 12. Cryogenic Equipment and Analyzer 13. Fermentor and Natural Products 14. High-performance Liquid Chromatography 15. Nuclear Magnetic Resonance Spectroscopy 16. Evaluation of Natural Products for Commercial Application 17. Overall Review and Discussion 18. Final Report
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