國立東華大學

課　　綱　Course Outline

海洋生物研究所碩士班生物科技組

中文課程名稱 Course Name in Chinese	高階細胞培養技術				
英文課程名稱 Course Name in English	Cell Culture Application				
科目代碼 Course Code	MBT_56480	班 別 Degree	碩士班 Master’s		
修別 Type	選修 Elective	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite					

課程目標
Course Objectives

本課程是學生認識細胞培養方法及細胞實驗技巧，基本細胞實驗為研究天然物活性最基本之技術，更深入開設具有活性主題連貫性之課程，培育具備專業知識與紮實實作能力之生物科技人才。

系教育目標
Dept.’s Education Objectives

1	培育海洋生命科學領域之研究人才 Nurture an international outlook of marine biotechnology research talent.
2	培養基礎理論與應用研究兼備之人才 Cultivation of biotechnology industry specific skills and research talent.
3	培養具國際觀之海洋生物科技研究人才 Cultivation of marine life sciences research talent.
4	培養生物科技產業所需之技術或研究人才 Basic training in both theory and applied research talent.
5	培養團隊合作能力之研究人才 Develop teamwork skills of research talent.

	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	具備海洋生命科學的基礎知識 Basic knowledge of marine life science is needed.	
B	具備獨立、創新及執行研究的能力 Independent innovation and the research ability are needed.	
C	具備邏輯思考、問題分析與問題解決的能力 Logical thinking, problem analysis and problem-solving abilities are needed.	

D	具備領導、溝通協調與團隊合作的能力 Good team communication, coordination and leadership skills are needed.	
E	具備國際視野以及外語溝通的能力 International vision and ability to communicate in foreign languages.	
F	善用資訊科技進行資訊蒐集、資料分析與統整 Use of information technology for information collection, analysis and integration.	
G	對於學術倫理及專業倫理有正確的認知與堅持 For professional ethics and academic responsibility have a correct understanding and persistence.	

圖示說明Illustration ：● 高度相關 Highly correlated ○中度相關 Moderately correlated

課程大綱
Course Outline

1. Basic cell culture
2. Establishment, maintenance, and cloning of himan dermal fibroblasts
3. Aging of cultured human skin fibroblasts
4. Ex vivo maintenance of differentiated mammalian cells
5. Scale-up of suspension and anchorage-dependent animal cells
6. Hollow-fiber cell culture
7. Separation and maintenance of primary T and B-lymphoacytes
8. Human pilosebaceous culture
9. Keratinocyte culture
10. Tissue culture of skeletal muscle
11. Isolation of Rat liver hepatocytes
12. Primary kidney cells
13. Human thyroid cells
14. Long-term B-lymphoid cultures from murine bone marrow
15. High proliferation potential colony-forming cells
16. Culturing primitive hemopoietic cells

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