



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	層析學特論				
英文課程名稱 Course Name in English	Special Topics in Chromatography				
科目代碼 Course Code	MBT_50500	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					
此課程的內容就教導學生如何運用層析法分離純化物質					
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. Introduction
2. How to Approach the Isolation of the Natural Products
3. Initial Extraction and Fractionation
4. Solid Phase Extraction and Membrane Extraction
5. Isolation by Planar Chromatography
6. Separation Modes and Mechanisms of Chromatography
7. Normal and Reversed-phase Chromatography
8. Preparative Column Chromatography
9. Low-Pressure Column Chromatography
10. Mid-Pressure Liquid Chromatography
11. High Performance Liquid Chromatography
12. Isolation by Size Exclusion Methods
13. Isolation by Ion-Exchange Methods
14. Supercritical Fluid Methods
15. Review and Discussion

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.)

儀器設備：海生館提供
師資：海生館研究人員

課程要求和教學方式之建議 Course Requirements and Suggested Teaching Methods

課程之教學方式以講授為主，實驗為輔

其他 Miscellaneous

參考資料：

1. Richard J.P. Cannell (Ed.), Natural Products Isolation, Humana Press, 1998.
2. L. R. Snyder and J. J. Kirkland, Introduction to Modern Liquid Chromatography, Wiley Interscience, New York, 1979.
3. K. Hostettmann, M. Hostettmann and A. Marston, Preparative Chromatography Techniques: Application in Natural Product Isolation, Springer-Verlag, New York, 1986.
4. Literatures from scientific papers