



課 綱 Course Outline
生命科學系學士班

中文課程名稱 Course Name in Chinese	應用酵素學				
英文課程名稱 Course Name in English	Applied Enzymology				
科目代碼 Course Code	LF__41450	班 別 Degree	學士班 Bachelor' s		
修別 Type	學程 Program	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite					
課程目標 Course Objectives					
使學生了解： 1. 酵素學基礎理論，包括：酵素結構與功能、酵素純化、活性分析以及酵素動力學。 2. 酵素在食品工業或生物技術產業上的應用。					
系教育目標 Dept.' s Education Objectives					
1	培養從事生命科學相關領域之人才 Cultivating talents engaged in life science				
2	培育學生具有自我學習、獨立思考與創新之能力 Fostering students to acquire the capabilities of self-learning, independent thinking, and innovation.				
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	具備生命科學相關學科之基礎知識 Having the basic knowledge of life science.			●	
B	具備邏輯分析與解決問題的能力 Having the capabilities of logical analysis and problem solving.			●	
C	具備資料整合、數據分析與書面及口頭報告之能力 Having the capabilities of data integration and analysis, and the skills of written and poster presentation.			●	
D	具備終生學習的能力 Having the capability of lifelong learning.				
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 of enzymes
2. Catalysis principles and nature of enzyme
3. Enzyme assay method
4. Purification of enzymes
5. Enzyme characterization
6. Enzyme kinetics
7. Enzyme inhibitor
8. Enzyme engineering
9. Enzyme applications in food industry
10. Enzyme applications in biotechnology
11. Student Presentation

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.)

現有合宜專任師資；提供投影機等教學用具。

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

The course will begin with the basic knowledge of enzyme including enzyme structure/function, activity assay, purification, and characterization. Enzyme kinetics and regulation of enzyme activity by activator, inhibitor and covalent-modification will then be addressed. Included also will be the examples of current and potential enzyme engineering technique as well as the application of enzyme in industries. Finally, students will propose and design a novel enzyme-based analytical or processing methods for industries.

其他
Miscellaneous