朝陽科技大學 099學年度第1學期教學大綱
Enzymology 酵素學

當期課號	1674	Course Number	1674
授課教師	賴龍山	Instructor	LAI,LONG SHAN
中文課名	酵素學	Course Name	Enzymology
開課單位	應用化學系(四日)三A	Department	
修習別	選修	Required/Elective	Elective
學分數	3	Credits	3
課程目標	本課程的目標是要讓學生對於酵素概念、酵素純化、酵素動力學、酵素催化反應、酵素抑制及酵素結構有基本的認識與了解，並且讓學生能夠熟悉蛋白質、二次代謝物的基本原理及應用，包括實際應用、治療及醫學有關之酵素研究的一些例子。	Objectives	This course intends to provide an introduction to the fundamental concepts in enzyme purification, mechanisms and kinetics, to the common methods for studying enzymes, and the current developments in the field. Give an approach to the study of the catalytic properties of enzymes and of the chemical basis of enzyme catalysis. The course also tries to provide an understanding of the principles and application of proteins, secondary metabolites and enzyme biochemistry in therapeutic applications and clinical diagnosis. The theoretical understanding of biochemical systems would certainly help to interpret the results of laboratory experiments.
教材	1.書面講義(請自行影印) 2.參考書: 陳石根等著,酶學,九州圖書.	Teaching Materials	1.Notes (copied by yourself) 2.Reference: see the Chinese version
成績評量方式	含期中考與期末考在內，本科目共預訂有三次考試，每次考試滿分約爲105 分；此外，另有一分份專題報告、占 100 分，它包括書面報告與口頭報告二部份(註：此報告格式另定)。此外，其他未盡事宜將另行通知。 爲讓修課學生注意上課秩序，掌握授課、學習重點，定期每週將小考一次、此部份當作課堂參與成績、它屬於額外的加分；換言之，本科目學期總成績之算法爲： (3 次考試成績 + 專題報告成績)/4 + (每週小考成績總分)。	Grading	In this course, there will be 3 tests, including the middle-term and finial examinations. A special report on enzyme technologies will also be required. Please note that a small quiz will be held every week, and an additional credit will be added in the course evaluation. In short, the final course grading will then be calculated as: (3* tests + a special report)/4 + (total credits in quiz)
教師網頁			
教學內容	地球上到處都有生命，從參天的大樹到顯微鏡下才能看見的細菌、病毒，形形色色，種類繁多，但不管生命是如何多樣，凡是有生命的地方就一定有酵素(或稱爲酶)，也一定需要酵素，因爲它參與生物個體內的代謝活動之調節。 近年來，酵素學的研究與醫學、藥物學、農學、營養學乃至於工程學，對人類生活的直接、間接有關係的領域日益密切，其重要性毋庸置疑；回顧歷史，酵素的研究始於瞭解受微生物催化之醱酵(fermentation)或腐敗(putrefication，它是一種無氧呼吸，即細菌在缺氧狀態下分解蛋白質和胺基酸作用)的現象。1839年Liebig和Berzelius等人認爲醱酵係由於「某種化學物質」的催化所引起；但1857年Pasteur認爲醱酵係由於活的酵母	Syllabus	Life exists evwerywhere in the world. Despite the biodiversity, life is indeed a system of cooperating enzyme reactions because a number of enzymes are inevitably reqiired and closely involved in the regulation of cell metabolism. Recently, the research of enzymology has been intimately linked to daily life of human being, such as the field of medicals, agriculture, nutrition or even engineering. Therefore, its imporance is widely recognized. While reviewing the development history of enzymes, we all know that the enzyme research was initiated and based on our understansding of fermentation and putrefication. The arguement on the chemical constitutents and the role of

	所促成；兩者間的爭論，一直到1897年Buchner才證明此兩種觀念皆有誤，他以酵母磨碎液(extract)再添加蔗糖，發生了與活酵母同樣的酒精醱酵之實驗才獲得結論：目前我們的瞭解是醱酵等生物化學反應現象，係由於酵素(來自細胞)之特異性的催化作用而來。		enzymes was more clear until the experiment by Buchner at 1987.

尊重智慧財產權，請勿非法影印。