朝陽科技大學 095學年度第2學期教學大綱
Applied Microbiology 微生物利用工業

當期課號	1569	Course Number	1569
授課教師	簡宣裕	Instructor	CHIEN,SHIUAN YUH
中文課名	微生物利用工業	Course Name	Applied Microbiology
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	微生物利用工業所涉及之範圍，隨著對微生物之了解日益廣泛，舉凡醫藥、食品、農藥等產業之發展皆和應用微生物有密切之關係。本課程主要講授：1.應用微生物學之起源、發展及未來趨勢。2.微生物特性所催化之各種生化反應。3.微生物代謝產物之利用,包括有機酸、胺基酸、酵素和抗生素等。4.微生物生理機能之利用，如固醇類之化學轉換。	Objectives	Synthesis of bioactive and chemotherapeutic compounds with the aid of microorganisms is an ever-increasing and one of the most important branch of microbial biotechnology in industries. This is apparent from the industrial fermentation activities dealing with production of antibiotics, anti-fungal agents, anti-tumor agents, vitamins, vaccines, biopolymers and amino acids etc. The purpose of this course is to provide the knowledge of the industrial microbiology such as classification and production of primary metabolites and secondary metabolites. These metabolites and their associated bioprocesses will also be discussed in this course.
教材	1.王三郎,2008,應用微生物學(高立圖書). 2.Industrial Microbiology - An itroduction (2001). Edited by Michael J. Waites, Neil L. Morgan, John S. Rockey and Gary Higton. Published by Blackwell Science Ltd. 3. Microbial Biotechnology Principles and Applications (2003). edited by Lee Yuan Kun. Published by World Scientific Publishing Co. Pte. Ltd. 5 Toh Tuck Link, Singapore. 4. Class notes. 1. Applied microbiology (2005). Edited by S. N. Wang. Gau Lih Book Co., Ltd. Taipei, Taiwan. 2.Industrial Microbiology - An itroduction (2001). Edited by Michael J. Waites, Neil L. Morgan, John S. Rockey and Gary Higton. Published by Blackwell Science Ltd.3. Class notes.	Teaching Materials	1. Applied microbiology (2008). Edited by S. N. Wang. Gau Lih Book Co., Ltd. Taipei, Taiwan. 2.Industrial Microbiology - An itroduction (2001). Edited by Michael J. Waites, Neil L. Morgan, John S. Rockey and Gary Higton. Published by Blackwell Science Ltd. 3. Applications (2003). edited by Lee Yuan Kun. Published by World Scientific Publishing Co. Pte. Ltd. 5 Toh Tuck Link, Singapore. 4. Class notes.
成績評量方式	期中考與期末考各佔 35 % ， 30 % 爲上課專心、上課出席及小考成績。	Grading	The grade of the course will be counted by the socres of mid-term and final examination (35 % for each test) and the performances of attending, preparing the course and quiz test (30 %).
教師網頁			
教學內容	課程主要目的在介紹有關微生物於工業生產上之利用與發展情形，課程架構分爲微生物生理、生物程序及以工業化方式應用微生物產製產品三大部份。內容涵蓋微生物之生長與所需養分、微生物代謝、常用於工業生產之微生物、微生物發酵基質、發酵系統、微生物酵素、利用微生物於生產能源、工業用原料化合物、保健產品、食品與飲料發酵產品、以微生物產製生質、應用微生物處理工業汙	Syllabus	The course is designed to introduce using microorganisms to create economic products with industry process. The content of the course will cover microbial physiology, fermentation media, fermentation system, product development, microbial enzymes, fuel and industrial chemicals, health care products, food fermentation, microbial biomass production.

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