朝陽科技大學 099學年度第2學期教學大綱
Introduction of Life Science 生命科學導論

當期課號	1621	Course Number	1621
授課教師	賴龍山	Instructor	LAI,LONG SHAN
中文課名	生命科學導論	Course Name	Introduction of Life Science
開課單位	應用化學系(四日)二A	Department	
修習別	必修	Required/Elective	Required
學分數	2	Credits	2
課程目標	課程是爲本系學生開設的一門基礎課程，並以傳授最新的生命科學與生物科技涵養，培養與生命科學相關的基礎科技研究人才爲教學之重要目標。其目的是向具有基本生物學概念及非具有生物專業背景學生傳授現代生命科學的基礎知識，使他們能夠應對進入新世紀面臨生命科學迅速發展所帶來的挑戰。	Objectives	The objectives of this course is let students to understand basic structures and mechanisms of the human body and the cells, and how life science is studied. The overall emphasis will be made on basic biology and medicine. The students are expected to develop a comprehensive understanding of fundamental and modern development in biology. This course is designed for the undergraduate students interested in life science and biomedicine even though without biology background.
教材	指定教材：微生物學 楊美桂編著 (2003) 藝軒圖書出版社(02-23676824) 參考書目：(視個人意願購買) 1.Microbiology: an introduction by Tortora, Funke and Case	Teaching Materials	See the selected teaching materials (written in Chinese)
成績評量方式	兩次小考、期中考與期末考各占25%，以作爲期末成績之基本評量；此外，學期成績之額外再加分部份包括課堂參與討論(特註：在每週上課之最後10-15分鐘,擬將以課堂小考來體替代上課點名,它一方式可幫同學歸納上課重點,也可能改善同學上課睡覺的壞習慣)。	Grading	In the course, there will be four tests, including middle-term and final examinations. Each of the four tests equally contribute 25% of the final course grading. Besides, bonus may be given based on the course-discussions, attendance or a 10-15 minute examinations.
教師網頁	_		
教學內容	傳統上，生命科學概論是人類瞭解自己的一門基礎學科；它乃經由對生命及科學的認知，來介紹生命的起源、與生命表徵有關的有機大分子、細胞代謝作用，以及酵素學、遺傳學、免疫概論等生物學基本的概念，其容並涵蓋與微生物界、植物界、動物界之生理與生化學。 基本上，現今的顯學「生物科技(如醫藥、農業、食品等)」其實就是商業化的生命科學，分佈最廣的微生物因其快速生長、代謝能力強等優點，遂成爲發展生物科技不可或缺的材料。因之，若從生命科學的角度來看，吾人可透過微生物之研究進一步來瞭解自然界生物世界的通則。爲延續「普通生物學」之教學，本課程擬以「微生物(如病毒、細菌、真菌等)」爲例子、而藉助「化學」的觀點來引導學生去瞭解生命的運作原理。 日常生活，我們常說人類是地球上最高等的生物；但從生物演化的觀點，細菌在較人類爲長的演化史中，其代謝效率高而且應該比人經得起天擇的	Syllabus	Basically, the purpose of life science is to understand the human society itself. Eexcept the general knowledge of Biology, life science covers an understanding microbiology, plants and animals, including the physiology. To our knowledge, "Biotechnology" of today is indeed the commercialization of "Life Science". Partially because of rapid cell growth with excellent capabilities in metabolism, microorganisms are widely used as tools in the development of biotechnology. Hence, we will mainly focus on the introduction of microbiology, where the related aspects (such as fermentation chemistry) will also be discussed in classes. From the points of view of life science, it is thus logical to study general rules of life science from our understanding of microorganisms. To describe the logics involved in the bioscience, this course will introduce, coupled with the help using the point of view of

	考驗，怎能說它們是低等生物呢？以美國麻省理工學院與耶魯大學爲例，其大一新生的除了化學、微積分與物理課程之外，生命科學已成爲該校最基本的必修課程之一，這是著眼於在未來世紀的科技工程、抑或社會科學領域的大學畢業生一方面爲增廣知識，二方面也可能將需面對較不熟悉而與『生物以及生命科學』等相關領域的應用與挑戰。		chemistry, the associated knowledge of Microbiology. To date, human beings are the so-called the highest organism in the world. From the point of view of evolution, bacteria are indeed the best group of organisms because of their productivities and capabilities. As you may know, except Chemistry, Calculus or Physics, the freshmen of MIT and Yale University (USA) are asked to take the course "Life Science" for the requirements of graduation. Such a change of the course-requirement is, in our opinions, based on the fact that the graduates from various disciplines (including science, engineering or other fields) may face the challenge from the less-familiar technology-related fields. It is believed that the fields as above are involved with the research of Biology and the associated aspects.

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