朝陽科技大學 096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	1592	Course Number	1592
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(藝軒圖書出版社) 參考書目： 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，以及一份書面報告(題目：微生物之形態特徵與其工業應用，格式另訂)各占20%，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(含不定期點名， 註：也可能以課堂考試替(約10分鐘)來代點名)。	Grading	In the course, there will be four tests, including middle-term and final examinations; meanwhile, a special report, entitled as Characteristics of a microorganism and application, will also be required. Each of these five parts equally contribute 20% of the final course grading. Besides, bonus may be given based on the course-discussions, attendance or 10-minute examinations.
教師網頁	_		
教學內容	日常生活，我們常說人類是高等生物；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。 傳統上，生命科學包括對遺傳學、生物化學、微生物學、酵素學以及分子生物學等知識的瞭解；此外，現今的顯學「生物科技」其實就是商業化的生命科學，其中所發生的無非是化學反應而已。吾人皆知，微生物(如病毒、細菌、真菌等)因其快速生長的優點，遂成爲發展生物科技不可或缺的材料，本課程之教學重心首先擬介紹微生物學的相關知識；整體而言，本課程擬將以「微生物」爲例、而以	Syllabus	Human beings are so far 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 their graduation. Such a change in 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 mentioned above are involved with the research of Biology and the associated aspects. Traditionally, this course (Life Science) is closely linked with the knowledge and development of Genetics, Biochemistry, and

	「化學」的觀點來引導學生去瞭解生命的運作原理與其應用(即醱酵生物技術)。		Enzymology etc. In fact, "Biotechnology" is indeed the commercialization of "Life Science",where the transformations/conversions involved are indeed the chemical reactions. As we all know, microorganisms are currently the best tools for biotechnology because of the rapid growth in cultures. In this course, we will mainly focus on the introduction of microbiology, where the related aspects (such as fermentation and biotechnology) will also be discussed.