朝陽科技大學 097學年度第2學期教學大綱
Immunological Technology and Application 免疫技術與分析應用

當期課號	7263	Course Number	7263
授課教師	張清安	Instructor	CHANG,CHIN AN
中文課名	免疫技術與分析應用	Course Name	Immunological Technology and Application
開課單位	生化科技研究所碩士班二A	Department	
修習別	選修	Required/Elective	Elective
學分數	3	Credits	3
課程目標	教導學生免疫學重要基本原理(包括基礎非特異性及特異性免疫功能之原理) 及其實際的免疫技術原理(如ELISA、immunoblotting、immunogold及flow cytometry等)，並進一步熟悉免疫技術的應用。另外並介紹免疫學研究之應用，如利用抗體或細胞激素爲藥物，及健康食品的免疫調節功能。	Objectives	This course will be aimed at teaching student basic concepts for immunology, which include innate immunity and adaptive immunity, and practical immunological technology which includes ELISA, immunoblotting, immunogold and flow cytometry. It also introduce application of immunological research such as using antibodies or cytokines as drugs, health food as immuno-modulator, etc.
教材	教師提供教學綱要及ppt檔案	Teaching Materials	Outlines and ppt will be provided by the teacher.
成績評量方式	期中期末二次筆試，及指定讀書報告作業	Grading	Mid-term, final examination and report of reading assignment.
教師網頁	_		
教學內容	一、免疫之基本原理。先天免疫與後天免疫。 二、免疫細胞之種類與功能。免疫反應誘發之過程與機制。 三、株落選擇與免疫球蛋白之分泌過程。免疫球蛋白之種類與功能。 四、單元抗體與多元抗體之差異與應用。 五、免疫反應與抗體專一性及親和性之關聯。 六、抗體之製備技術。Ⅰ. 抗原之基本條件。Ⅱ. 抗原之純化、保存與製備。 七、抗體之製備技術。Ⅲ. 免疫動物之選擇、注射及採血技術。 八、抗體之製備技術。Ⅳ. 血清與抗體之純化與保存方法。 九、血清學技術。Ⅰ. 血清學技術之演變。 十、血清學技術。Ⅱ. 血清學技術之種類與原理 十一、 血清學技術。Ⅲ. 血清學技術在生物學研究上之應用。 十二、血清學技術在分子生物學研究上之應用。	Syllabus	1.Basic theory of immuonology. 2.Cells involved in immune response. 3.Types and their functions of immunoglobulins. 4.Monoclonal and polyclonal antibodies, their characteristics and applications. 5.Specificity and affinity of antibodies and their application in serological tests. 6.Preparation techniques for antibodies; Ⅰ. Types of antigens, Ⅱ Purification, preservation and preparation of immunogens. 7.Preparation techniques for antibodies; Ⅲ. Selection of animals for immunization, immunization and bleeding technologies. 8. Preparation techniques for antibodies; Ⅳ. Purification and preservation techniques of antisera and antibodies. 9.Serological techniques; Ⅰ. Development and future trend of serological techniques. 10.Serological techniques; Ⅱ. Mechanism and protocol of various important serological techniques. 11.Serological techniques; Application in biological research. 12.Serological techniques; Application in molecular biological research.