

朝陽科技大學 093學年度第2學期教學大綱
Special Topics of Bioinformatics 生物資訊特論

當期課號	7311	Course Number	7311
授課教師	呂秀英	Instructor	LU,HSIU YING
中文課名	生物資訊特論	Course Name	Special Topics of Bioinformatics
開課單位	生物技術研究所碩士班一A	Department	
修習別	選修	Required/Elective	Elective
學分數	3	Credits	3
課程目標		Objectives	
教材	講義說明+電腦實機操作演練+參考文獻 / Lectures presentation+computer practice+references	Teaching Materials	
成績評量方式	出席及實機操作:20%, 期中考:40%, 期末報告及討論:40%	Grading	Attendance and operation:20%, Mid exam:40%, Final paper discussion and report:40%
教師網頁	http://www.tari.gov.tw/霧峰總所/農藝系/試驗統計/試驗統計.HTM		
教學內容	<p>本課程將分為兩大階段，先由基礎觀念建立及電腦操作指導，使學生熟習各種相關網路資源及生物資訊分析工具；再由聘自中央研究院、農業試驗所等學術研究單位之專家依其專業專長共同授課。課程內容涵蓋：生物資訊及分子生物概述、網路資源及資料庫搜尋、序列分析(含DNA定序及組合、成對序列排比、多重序列排比)、基因發現與註解、基因表現分析及資訊(含EST,SNP,SAGE,微陣列)、重複序列和轉位因子、遺傳圖譜與物理圖譜建立、分子親源樹分析、隱匿馬可夫模式、蛋白質家族分類及基因預測、生物資訊之資料探勘等主題。此課程將能培養同學們跨領域之思考能力，建立生物資訊之基本概念，熟習相關網路資源及生物資訊工具，並掌握生物資訊之研究現況及發展。</p>	Syllabus	<p>This course will include basic concepts and special topics on bioinformatics. The scholars from the Academia Sinica and Taiwan Agricultural Research Institute will be invited to give instruction, according to their expertise. The coverage will include: overview of bioinformatics and molecular biology; web resources and databases searching; sequence analysis (including DNA sequencing and assembly, pairwise sequence alignment, multiple sequence alignment); gene finding and annotation; gene expression analysis and informatics (including EST, SNP, SAGE, microarray); repeat sequences and transposon elements; genetic and physical mapping; phylogenetic tree prediction; hidden Markov models; protein family classification and gene prediction; data mining for bioinformatics. This course will familiarize students with the principles, web resources, analytical tools and computational methods of contemporary bioinformatics for future research and advanced study.</p>

尊重智慧財產權，請勿非法影印。