

處理學期(Current Semester)：1092

請尊重智慧財產權，請勿非法影印

1092學期所開設課程『生物技術學』的課程內容

課程代碼(Course Number)	B3A0347N		
授課老師(Instructor)	吳彰哲(Chang-Jer Wu)		
中文課名(Chinese Course Title)	生物技術學		
英文課名(English Course Title)	Biotechnology		
開課年班(Grade and Class)	3A		
選課人數(Quantity)	53		
選課類別(Course Type)	必修(Required Course)		
上課時間(Course Meeting Days/Times)	302,303,304		
上課地點(Classroom)	未定		
開課系所(Department/Institute Office of Course)	食品科學系生物科技組(Food Science, Division of B)		
學分(Credit(s))	3		
人數上限(Maximum Number of Students)	65		
人數下限(Minimum Number of Students)	10		
開課期別(Course Type)	單學期(semester course)		
是否實習	否		
備註(Note)	食科系甲子廳上課.		

課程綱要

教學目標 Objective	中文	簡介生物技術的發展、原理。
	English	The aim of the class is to introduce upper level undergraduate students to the main theoretical concepts and experimental designs in biotechnology. Specific course aims include: (1) an introduction of the basic concepts and issues in biotechnology, (2) development of techniques and data analysis, (3) develop skills in protein production, purification and characterization, and (4) develop an understanding of the application of these techniques in medicine and the agriculture.
先修科目 Pre Course	中文	充實生物化學和分子生物知識 biochemistry and molecular biology
教材內容 教材內容	English 中文	1.生物技術發展史 2.基因操作原理 3.生物技術的應用 4.生物技術的最新發展
Outline	English	This course is designed to introduce students to areas and concepts involved in Biotechnology that is a rapidly booming field, marked by powerful techniques and significant social and scientific impact. Techniques introduced should lead students understand how to take the advantages of such powerful tools on their own researches or careers in the future, especially as those pertain to medicine, agriculture, and the environment. In addition, students' knowledge with respect to biology, biochemistry, and
教學方式 Teaching Method	中文	講解和問答
參考書目 Reference	English 中文	Richard J. Reece, "Analysis of Genes and Genomes", John Wiley

教學進度

中文

1. Introduction (DNA: structure and function)
2. Basic techniques I
3. Basic techniques II
4. Vectors
5. Polymerase chain reaction
6. Gene cloning I
7. Gene cloning II
8. Gene identification
9. Creating mutations
10. Protein production and purification I
11. Protein production and purification II
12. Genome sequencing
13. Post-genome analysis
14. Engineering plants
15. Engineering animal cells
16. Engineering animal

Syllabus

評量方式

Evaluation

參考網址

English

中文 測驗和報告

English tests and reports