朝陽科技大學 095學年度第2學期教學大綱
Plant Tissue Culture Techniques 植物細胞組織培養技術

當期課號	7236	Course Number	7236
授課教師	蔡新聲	Instructor	TSAY,HSIN SHENG
中文課名	植物細胞組織培養技術	Course Name	Plant Tissue Culture Techniques
開課單位	生物技術研究所碩士班二A	Department	
修習別	選修	Required/Elective	Elective
學分數	3	Credits	3
課程目標	1) 從生物技術看台灣農業願景。 2) 組織培養的作物繁殖。 3) 花葉培養與作物育種。 4) 藥用植物的組織培養。 5) 植物生長調節劑。 6) 胚培養及試管授精。 7) 生長點、莖頂及芽體培養的作物繁殖。 8) 康乃馨生長點的摘取及培養。 9) 蕨類植物的組織培養。 10) 蘭科植物的組織培養。 11) 癒合組織的誘導及增生。 12) 細胞懸浮培養及二次代謝物之生產。	Objectives	1) Commercial application of plant tissue culture in Taiwan. 2) Plant propagation through tissue culture. 3) Anther culture and crop improvement. 4) Tissue culture of medicinal herbs. 5) Plant growth regulators. 6) Embryo culture and test-tube fertilization. 7) Plant propagation through apical meristem and SAM. 8) Tissue culture of gilliflower. 9) Tissue culture of pteridophyte. 10) Tissue culture of orchidacea. 11) Callus induction and propagation. 12) Cell suspension culture and the propagation of secondary metabolites.
教材	自編講義.	Teaching Materials	Teachers own material.
成績評量方式	實際操作及期末考試.	Grading	Operation and test.
教師網頁	http://www.cyut.edu.tw/~ib		
教學內容	上課內容： 1.從生物技術看台灣農業願景 2.組織培養的作物繁殖 3.花葉培養與作物育種 4.藥用植物的組織培養 5.植物生長調節劑 6.胚培養及試管授精 7.生長點、莖頂及芽體培養的作物繁殖 8.細胞懸浮培養 9.原生質體分離、培養及植株再生 10.基因轉移技術與遺傳工程 11.組織培養的試驗設計分析 12.試管嬰兒的照相技術 實習內容： 1.貯藏液及培養基之配製 2.癒合組織之誘導、繼代培養技術及植株之再生 3.水稻及蘆筍之花藥培養技術 4.水稻幼胚之摘取及培養 5.蘭花種子之無菌播種 6.蝴蝶蘭花梗節培養之大量繁殖 7.生長點、莖頂及茅體培養的作物繁殖 8.火鶴花之葉片培養大量繁殖 9.蕨類植物的孢子播種及大量繁殖 10.細胞懸浮培養 11.原生質體培養 12.試管嬰兒的照相技術	Syllabus	Lecture Topics: 1.Commercial application of plant tissue culture in Taiwan 2.Plant propagation through tissue culture 3.Anther culture and crop improvement 4.Tissue culture of medicinal herbs 5.Plant growth regulators 6.Embryo culture and test-tube fertilization 7.Meristem, shoot tip and bud culture 8.Cell suspension culture 9.Protoplast isolation culturing and plant regeneration 10.Gene transfer techniques and genetic engineering 11.Statistical methods for tissue culture experiments 12.Photographic techniques Laboratory Exercise 1. Stock solution and medium preparation 2. Callus induction, subculturing and plant regeneration 3.Anther culture of rice and asparagus 4.Embryo rescue and culture in rice 5.Seed germination of orchid 6.Peduncle culture of Phalaenopsis orchid 7.Meristem or shoot tip culture of carnation 8.Leaf culture of anthurium 9.Spore germination and tissue culture of fern 10.Cell suspension culture 11.Protoplast isolation and culturing

			12.Photo graphic technique

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