



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	細胞培養技術概論		學年/學期 Academic Year/Semester	114/1
課程名稱(英文) Course Name in English	Cell Culture Application			
科目代碼 Course Code	MBT_56420	系級 Department & Year	碩士	開課單位 Course-Offering Department 海洋生物研究所
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)	3.0/3.0	
授課教師 Instructor	/呂美津			
先修課程 Prerequisite				
課程描述 Course Description				
本課程是學生認識細胞培養方法及基本細胞實驗技巧，基本細胞實驗為研究天然物活性最基本之技術，更深入開設具有活性主題連貫性之課程，培育具備專業知識與紮實實作能力之生物科技人才。				
課程目標 Course Objectives				
本課程是學生認識細胞培養方法及基本細胞實驗技巧，最後冷凍保存細胞，這些基本細胞實驗為研究天然物活性最基本之技術，更深入開設具有活性主題連貫性之課程，培育具備專業知識與紮實實作能力之生物科技人才，為十分重要的課程。				
系專業能力 Basic Learning Outcomes				課程目標與系專業能力相關性 Correlation between Course Objectives and Dept.'s Education Objectives
A	具備海洋生命科學的基礎知識Basic knowledge of marine life science is needed.			●
B	具備獨立、創新及執行研究的能力Independent innovation and the research ability are needed.			●
C	具備邏輯思考、問題分析與問題解決的能力Logical thinking, problem analysis and problem-solving abilities are needed.			●
D	具備領導、溝通協調與團隊合作的能力Good team communication, coordination and leadership skills are needed.			●
E	具備國際視野以及外語溝通的能力International vision and ability to communicate in foreign languages.			●
F	善用資訊科技進行資訊蒐集、資料分析與統整Use of information technology for information collection, analysis and integration.			●
G	對於學術倫理及專業倫理有正確的認知與堅持For professional ethics and academic responsibility have a correct understanding and persistence.			●
圖示說明 Illustration : ● 高度相關 Highly correlated ○ 中度相關 Moderately correlated				
授課進度表 Teaching Schedule & Content				
週次 Week	內容 Subject/Topics			備註 Remarks
1	Basic cell culture-To focus the basic techniques required for successful cell culture			https://meet.google.com/aam-dbsj-aeef
2	Establishment, maintenance, and cloning of human dermal fibroblasts -To establish a reliable protocol for the maintenance the primary cell, such as fibroblasts			https://meet.google.com/aam-dbsj-aeef
3	Aging of cultured human skin fibroblasts-To study the in vitro cellular senescence for understanding organism aging			https://meet.google.com/aam-dbsj-aeef

4	Ex vivo maintenance of differentiated mammalian cells-Maintenance of differentiated epithelia cells including ex vivo can be achieved now to a surprising degree through recognition of two complimentary and dramatically interacting sets of mechanisms	
5	Scale-up of suspension and anchorage-dependent animal cells-The principles and techniques of scale-up for cell culture	
6	Hollow-fiber cell culture-Hollow-fiber mammalian cell culture	
7	Separation and maintenance of primary T and B-lymphocytes-To establish T- and B-lymphocytes from clinical material	
8	Human pilosebaceous culture-To establish human pilosebaceous culture	
9	期中考試週 Midterm Exam	
10	Establishment, maintenance, and cloning of human dermal fibroblasts -To establish, maintenance, and clone the human dermal fibroblasts	
11	Culturing primitive hemopoietic cells-To establish the maintenance of normal primitive hemopoietic cell types in culture for long periods	
12	Keratinocyte culture-To establish the keratinocyte culture on tissue-culture plastics	
13	Tissue culture of skeletal muscle-The disaggregating method used to grow skeletal muscle from neonatal mouse muscle	
14	Culture of cells from human tumors of the nervous system on an extracellular cells derived from bovine corneal endothelial cells-To culture the human tumor cells from the nervous system	
15	Long-term B-lymphoid cultures from murine bone marrow establishment and cloning by using stromal cell line AC 6.21-To establish long-term proliferation and differentiation of early B-lymphocyte lineage cells	
16	Mouse long-term bone marrow culture-To establish the human hematopoietic cells from bone marrow	
17	Culturing primitive hemopoietic cells	
18	期末考試週 Final Exam	

教學策略 Teaching Strategies

- 課堂講授 Lecture
 分組討論 Group Discussion
 參觀實習 Field Trip
 其他 Miscellaneous:

教學創新自評 Teaching Self-Evaluation

創新教學(Innovative Teaching)

- 問題導向學習(PBL)
 團體合作學習(TBL)
 解決導向學習(SBL)
 翻轉教室 Flipped Classroom
 磨課師 Moocs

社會責任(Social Responsibility)

- 在地實踐 Community Practice
 產學合作 Industry-Academia Cooperation

跨域合作(Transdisciplinary Projects)

- 跨界教學 Transdisciplinary Teaching
 跨院系教學 Inter-collegiate Teaching

- 業師合授 Courses Co-taught with Industry Practitioners

其它 other:

學期成績計算及多元評量方式 Grading & Assessments

配分項目 Items	配分比例 Percentage	多元評量方式 Assessments							
		測驗 會考	實作 觀察	口頭 發表	專題 研究	創作 展演	卷宗 評量	證照 檢定	其他
平時成績(含出缺席) General Performance (Attendance Record)	20%		✓						
期中考成績 Midterm Exam	30%			✓					
期末考成績 Final Exam	30%			✓					
作業成績 Homework and/or Assignments	20%		✓						
其他 Miscellaneous (_____)									

評量方式補充說明

Grading & Assessments Supplemental instructions

教科書與參考書目 (書名、作者、書局、代理商、說明)

Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)

Basic Cell culture protocols, Edited by Jeffery W. Pollard and John M. Walker, Humana press)

課程教材網址(含線上教學資訊, 教師個人網址請列位於本校內之網址)

Teaching Aids & Teacher's Website(Including online teaching information.

Personal website can be listed here.)

<https://meet.google.com/aam-dbsj-aej>

其他補充說明 (Supplemental instructions)