

 國立東華大學
教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	高階細胞培養技術			學年/學期 Academic Year/Semester	113/2
課程名稱(英文) Course Name in English	Cell Culture Application				
科目代碼 Course Code	MBT_56480	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，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。					
課程目標 Course Objectives					
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	Cell fates-Cells develop phenotypes that are determined by organized and regulated molecular processes and diverse fates including proliferation, differentiation, and apoptosis.				
2	Cell cycle regulatory cascades-The regulation of cell number is of major importance to both unicellular and multicellular organisms.				
3	Cell cycle inhibitory proteins-Studies on cell cycle control focus on the progression of cells through G1 into S phase. A particular group of proteins with important role controlling the decision of cells to exit the cell cycle are CDK-inhibitory proteins.				
4	Architectural organization of the regulatory machinery for transcription, replication, and repair: dynamic temporal-spatial parameters of cell cycle control-The process focuses on the accruing insights into nuclear architecture and cytoarchitecture and their contributions to the subcellular localization and activity of the regulatory machinery for replication, transcription and repair.				
5	Membrane receptors and signal transduction pathways in G1 The G1 phase of cell cycle is to regulate the passage of cell into and through G1-				
6	Onset of DNA synthesis and S phase-The identification and characterization of cylcins and CDKs are associated with entry into and progression through S phase.				
7	Chromatin remodeling and cancer-Misregulation of many of the cromatin remodeling enzymes has been associated with defects in cellular proliferation and tumorigenesis.				

8	Apoptosis signaling in normal and cancer cells-Understanding the molecular events that contribute to drug-induced apoptosis, and how tumors evade apoptotic death, provides a paradigm to explain the relationship between cancer genetics and treatment sensitivity and should enable a more rational approach to anticancer drug design and therapy.	
9	期中考試週 Midterm Exam	
10	Apoptosis signaling in normal and cancer cells-Understanding the molecular events that contribute to drug-induced apoptosis, and how tumors evade apoptotic death, provides a paradigm to explain the relationship between cancer genetics and treatment sensitivity and should enable a more rational approach to anticancer drug design and therapy.	
11	Mutagenesis, mutation, and repair-The process focus on the major DNA repair and maintenance pathways and their relevance to cancer.	
12	Oncogenesis-Oncogenesis is used to include any gene whose expression is associated with enhanced growth of tumor cells.	
13	Autophagosome and phagosome-Autophagy and phagocytosis are evolutionarily ancient processes functioning in capture and digestion of material found in the cellular interior and exterior, respectively.	
14	Fine structure of autophagosome-Detailed introductions are given for the preparation of cells for conventional electron microscopy and for the identification of autophagic vacuoles by morphology.	
15	Methods for assessing apoptotic cell death-The methods to assess the promotion and inhibition of apoptotic cell death via pharmacological and genetic manipulations.	
16	Methods for assessing autophagy and autophagic cell death-The methods to assess the promotion and inhibition of autophagic cell death via pharmacological and genetic manipulations.	
17	Methods for assessing autophagy and autophagic cell death-The methods to assess the promotion and inhibition of autophagic cell death via pharmacological and genetic manipulations.	
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.)									
Cell Cycle and Growth: Biomolecular regulation and cancer, Edited by Gary S. Stein and Arthur B. Pardee. A John Willy&Sons., Publication Apoptosis, Edited by Lawrence M. Schwarts and Jonathan D. Ashwell. Academic press. Autophagosome and Phagosome, Edited by Vojo Deretic. 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.)									
其他補充說明 (Supplemental instructions)									