



## 教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	分子醫學診斷		學年/學期 Academic Year/Semester	112/2	
課程名稱(英文) Course Name in English	Diseases and Molecular Diagnostics				
科目代碼 Course Code	LF_41540	系級 Department & Year	學三	開課單位 Course-Offering Department	生命科學系
修別 Type	學程 Program	學分數/時間 Credit(s)/Hour(s)	2.0/2.0		
授課教師 Instructor	/彭致文				
先修課程 Prerequisite					
課程描述 Course Description					
<p>醫學檢驗及生物技術都是日新月異、一日千里的科技科學。除了學理知識時刻在更新外，應用的儀器或設備也時時翻新。生醫相關技術及儀器訓練是培養醫學檢驗、醫學研究及生物科技專業研發及產業人才的必須課程。</p> <p>Medical tests and biotechnology are science and technology that constantly change almost everyday. In addition to the updating of academic knowledge, the applied instruments or equipment are continuously renovated. Biomedical related technologies and instrument training are essential courses for training students for the medical testing, medical research and biotechnology professions. Students will also be exposed to current biotechnology and pharmaceutical developments or job opportunities in Taiwan and Asia. English is used in the classroom and in written reports.</p>					
課程目標 Course Objectives					
<p>分子生物學的發展，使得實驗診斷學，也走向分子的層次。兩者結合所衍生的分子診斷學與技術，也立即在醫學、遺傳、法醫、食品等諸多領域有著廣泛且深遠的應用。本課程期望使研究生與高年級之大學部學生能在修習基礎的分子生物學與技術之後，能藉此窺知其應用，並實際與其本身之研究或工作產生連結。提供學員實務操作分子診斷應用的生物技術，學員修過本課程後將會對基因體的分子檢測及在分子醫學的應用有清楚深入的認識。</p>					
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	具備生命科學相關學科之基礎知識Having the basic knowledge of life science.			●	
B	具備邏輯分析與解決問題的能力Having the capabilities of logical analysis and problem solving			●	
C	具備資料整合、數據分析與書面及口頭報告之能力Having the capabilities of data integration and analysis, and the skills of written and poster presentation.			●	
D	具備終生學習的能力Having the capability of lifelong learning.			●	
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	Introduction				
2	The techniques to detecting DNA- Southern, PCR, qPCR				
3	The techniques to detecting DNA- NGS				
4	The techniques to detecting RNA- Northern, RT-PCR, qRT-PCR				

5	The techniques to detecting RNA- small RNAs	
6	The techniques to detecting Protein- Western, IP, ELISA	
7	The techniques to detecting Protein- IF, Proximity Ligation Assay (PLA)	
8	CRISPR Chromatin immunoprecipitation	
9	期中考試週 Midterm Exam	
10	Tissue Staining and Special Staining	
11	Culture of microbes	
12	Antioxidant enzymes and Antioxidation	
13	Biofunction evaluation- Cell model	
14	The Screen of functional Microbes	
15	Biofunction evaluation- Microbes model	
16	The principle and application of LC-MS/MS	
17	The principle and application of GC-MS/MS	
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 General Performance	30%		✓						
期中考成績 Midterm Exam	25%	✓							
期末考成績 Final Exam	25%	✓							
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.)

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)