



課 綱 Course Outline
生命科學系學士班

中文課程名稱 Course Name in Chinese	精準醫療				
英文課程名稱 Course Name in English	Precision medicine				
科目代碼 Course Code	LF__41470	班 別 Degree	學士班 Bachelor' s		
修別 Type	學 程 Program	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite					
課程目標 Course Objectives					
本課程涵蓋了精準醫學領域的當前臨床實踐，以及組學在臨床中的潛在臨床應用。學生對於如何使用精準醫學方法研究患者病例並解決診斷和治療問題有完整的認知。					
系教育目標 Dept.' s Education Objectives					
1	培養從事生命科學相關領域之人才 Cultivating talents engaged in life science				
2	培育學生具有自我學習、獨立思考與創新之能力 Fostering students to acquire the capabilities of self-learning, independent thinking, and innovation.				
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					
課程大綱					

Course Outline

1. Introduction
2. “Omics” and precision medicine
3. Genetic syndromes and precision medicine in childhood
4. Discovery of novel targets for therapy and biomarkers of diseases
5. Implications of precision medicine for patient care: molecular profiling and clinical genomic medicine
- 6-8. Molecular diagnostics and molecular precision therapeutics in cancer: solid tumors (emphasis on breast cancer, lung cancer, colorectal cancer, melanoma, prostate cancer, brain tumours)
- 9 期中考試週 Midterm Exam
- 10-11. Molecular diagnostics and molecular precision therapeutics in cancer: hematologic malignancies (emphasis on Hodgkin and non Hodgkin lymphomas, acute leukemias, chronic myeloproliferative neoplasia, histocytic neoplasms)
12. Biology-based prognostic factors in cancer and patient stratification for optimal therapy
13. Clinical trials with examples: retrospective versus randomised trials for cancer patients
14. Targeting the host immune system: applications of immunotherapy in human diseases
15. Impact of precision medicine on common non-neoplastic diseases (type II diabetes, cardiovascular diseases, autoimmune diseases, neurological and psychiatric disorders)
16. Regulatory aspects for molecular precision diagnostics: research, clinical development projects and implementation in clinical practice
17. Ethical issues in precision medicine
18. 期末考試週 Final Exam

資源需求評估 (師資專長之聘任、儀器設備的配合 . . . 等)
Resources Required (e.g. qualifications and expertise, instrument and equipment, etc.)

課程要求和教學方式之建議
Course Requirements and Suggested Teaching Methods

其他
Miscellaneous