



# 課 綱 Course Outline

## 生化暨分子醫學科學系學士班

中文課程名稱 Course Name in Chinese	生物資訊分析				
英文課程名稱 Course Name in English	Bioinformatics analysis				
科目代碼 Course Code	BMM_33470	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					
This course covers the computational analysis of several important forms of genomic data. Topics include reproducible research principles, genomics workflows, sequence alignment, genome annotation, parallel computing, and metagenomics. Participants will be familiar with the up-to-date analyses of data extracted from both human and bacteria at the end of the semester.					
系教育目標 Dept.' s Education Objectives					
1	培養生化及生物醫學相關領域之人才。 Cultivating talents engaged in biochemistry and molecular medicine.				
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		
Bioinformatics is the application of tools of computation and analysis to the capture and interpretation of biological data. It is essential for management of data in modern biology and medicine. This course will start with an overview of the basic principles of bioinformatics. Knowledge in genetics and genomics needed in this course will be reviewed. Then we will focus on the analyses of human genome and microbiome using top-notch studies as examples. Students with all English levels are welcome.		
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.)		
現有合宜專任師資。需要生物資訊、生物科技相關圖書及期刊。		
課程要求和教學方式之建議 Course Requirements and Suggested Teaching Methods		
Traditional teaching methods plus group discussions.		
其他 Miscellaneous		