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②图 i 東華大學 教學計劃表 Syllabus

		秋	一可到仪	Oy 11	abus					
	課程名稱(中文) Course Name in Chinese 統計專論(一)				學年/學期 Academic Year/Seme	ester 113/2				
	名稱(英文) me in English	Topics in Statistics (I)								
	-目代碼 rse Code	系級 開課單位 Course-Offering Department Department				應用數學系				
	修別 Type	選修 Elective	0/3.0							
	課教師 tructor	/簡立欣								
	修課程 equisite									
		課	程描述 Course	Descrip	tion					
This course	e primarily intr	oduces statist	ical methods f	or genomi	去背後的問題背景,以 c research using po and relevant statist	opulatio	on data,			
		課	程目標 Cours	se Object	ives					
	專長區分,設定個 ectives are subj		ertise of the	instructo	or.					
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 具備專業機率、統計知識與應用分析能力。Have well-founded expertise in probability and statistics, and good analytical ability in solving real problems.										
B 具備程式設計與統計計算能力。Have the computer programming and statistical computing skills.							\bigcirc			
C 具備學習其它學科的能力,以期能邁向跨領域研究。Be able to study other fields of science so as to conduct interdisciplinary research in the future.							0			
					度相關 Moderately	corre	lated			
		授課進	度 表 Teaching	Schedule	e & Content					
週次Week		內容 Subject/Topics				1	備註Remarks			
1	Introduction	Introduction								
2	Fundamental Concepts and the Human Genome									
3	Hardy-Weinberg Equilibrium/Linkage Disequilibrium									
4	4 Population Structure and Stratification									
5	Genome-Wide Association Studies (GWAS)									
6	Statistical Mod	lels for Geneti								
7	Statistical Models for Genetic Data Analysis									
	I .									

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Statistical Models for Genetic Data Analysis

9	期中考試週 Midterm Exam							
10	Heritability							
11	Heritability / Genotype Imputation							
12	Genotype Imputation							
13	Meta-analysis							
14	Meta-analysis							
15	Mendelian Randomization and Instrumental Variables							
16	Mendelian Randomization and Instrumental Variables							
17	Final Report							
18	Final Report							
教學策略 Teaching Strategies								
✓ 課堂講授 Lecture								
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							
社會責任(社會責任(Social Responsibility)							
■ 在地實踐Community Practice ■ 産學合作 Industy-Academia Cooperation								
跨域合作(Transdisciplinary Projects)								
一跨界教學Transdisciplinary Teaching 跨院系教學Inter-collegiate Teaching								
業師合授 Courses Co-taught with Industry Practitioners								
其它 other	r:							

學期成績計算及多元評量方式 Grading & Assessments									
配分項目	配分比例 Percentage	多元評量方式 Assessments							
Items		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)	10%		~						
期中考成績 Midterm Exam	30%	>							
期末考成績 Final Exam	30%			~	~				
作業成績 Homework and/or Assignments	30%		~						
其他 Miscellaneous	0%								

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.)

- 1. Mills, Melinda, Nicola Barban, and Felix C Tropf. An Introduction to Statistical Genetic Data Analysis / Melinda C. Mills, Nicola Barban, and Felix C. Tropf. Cambridge, Massachusetts: The MIT Press, 2020. Print.
- 2. https://genome.sph.umich.edu/wiki/Biostatistics_666:_Main_Page
- 3. Ziegler, Andreas; König, Inke R. (2010) A Statistical Approach to Genetic Epidemiology: With Access to E-Learning Platform by Friedrich Pahlke, Second Edition.

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)