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# ②國玄東華大學 教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	隨機信號與程序		學年/學期 Academic Year/Sem	ester	113/2			
課程名稱(英文) Course Name in English	Random Signals and Stochastic Processes							
科目代碼 Course Code	EED0300	系級 Department 博士 Course-Offering Department		電機工程學系				
修別 Type	選修 Elective	0/3.0	.0					
授課教師 Instructor	/張伯浩							
先修課程 Prerequisite								
課程描述 Course Description								
This course aims for the understanding of random signals and stochastic processes.								
課程目標 Course Objectives								
This course aims for the understanding of random signals and stochastic processes.								
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 培育具備電機電子資訊工程等專業技術研發之能力。To cultivate the research and developing ability of electrical, electronics and information engineering。								
	拉育系統分析、模擬驗證、實作實現之能力。To cultivate the advanced ability of							
C 訓練軟體工具使用與硬體 the utilization of sof	1	0						
D 訓練電機電子資訊專業知識與工程實務相互結合運用之能力。To train the integrate ability between professional EECS knowledge and engineering practice。								
E 落實高科技研究之分工整 -tech research with in	1	0						
F 落實發掘問題、邏輯分析 finding, logical analy	1	0						
了解學術倫理與智慧財產 G the ability of multi-s have the ability of ac		0						
參與國際研討會了解國際市場變化與未來研究走向,具備純熟科技英文閱讀溝通寫作之能力。To participate the conferences to understand the change of global market and the future trend as well as to have the skillful ability of reading, conversation and technical writing in English。								
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	Axioms of Probability				
3	Random Variables: Distributions and Densities				
4	Functions of One Random Variable				
5	Expected Value, Moments and Characteristic Function				
6	Joint Distributions and Densities				
7	Functions of Two Random Variables				
8	4/7 調整上課(放假)				
9	期中考試週 Midterm Exam				
10	Convergence, Law of Large Numbers and Central Limit Theorem				
11	Mean-Square Estimation and Orthogonality Principle				
12	Stationary Random Processes				
13	Transformation of Random Processes (Systems)				
14	Continuous-Time Signals and Systems				
15	Discrete-Time Signals and Systems				
16	Correlation and Power Spectrum				
17	期末考試週 Final Exam				
18	Matched Filters				
	教 學 策 略 Teaching Strategies				
課堂講	授 Lecture	Field Trip			
其他Mis	scellaneous:				
	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	基習(SBL)			
翻轉教	室 Flipped Classroom				
社會責任(	Social Responsibility)				
	踐Community Practice        產學合作 Industy-Academia Cooperati	on			
跨域合作(	Transdisciplinary Projects)				
	學Transdisciplinary Teaching      跨院系教學Inter-collegiate Teaching	S			
業師合:	授 Courses Co-taught with Industry Practitioners				
其它 othe	r:				
1					

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)									
期中考成績 Midterm Exam	50%								
期末考成績 Final Exam	50%								
作業成績 Homework and/or Assignments									
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.)

Textbook: A. Papoulis and S. Pillai, "Probability, Random Variables and Stochastic Processes", 4th ed. 2002, McGraw Hill (歐亞)

### References:

- 1. Roy D. Yates and David J. Goodman, "Probability and Stochastic Processes", 2nd ed. 2005, John Wiley (滄海)
- 2. R. Hogg and A. Craig, "" Introduction to Mathematical Statistics", 5th ed. 1995, Prentice Hall (台北)
- 3. E. Cinlar, "Introduction to Stochastic Processes", 1975, Prentice Hall
- 4. S. Ross, "Stochastic Processes", 1983.
- 5. E. Wong, "Stochastic Processes in Information and Dynamical Systems", 1971, McGraw Hill.

# 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)