國立東華大學

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/Semester	113/2
課程名稱(英文) Course Name in English	Random Signals and Stochastic Processes				
科目代碼 Course Code	EE__M0200	系級 Department & Year	碩士	開課單位 Course-Offering Department	電機工程學系
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)	3.0/3.0		
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

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 ☐ 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 Industy-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									
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)