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國立東華大學

教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	實變函數論(一)AB			學年/學期 Academic Year/Semester	113/2
課程名稱(英文) Course Name in English	Real Analysis (I)				
科目代碼 Course Code	AM__5270AB	系級 Department & Year	碩士	開課單位 Course-Offering Department	應用數學系
修別 Type	必修 Required	學分數/時間 Credit(s)/Hour(s)	3.0/3.0		
授課教師 Instructor	/周君彥				
先修課程 Prerequisite					

課程描述 Course Description

本課程假設同學們具備基本的點集論、高等微積分與一些基本的拓樸學的知識，嚴格地討論Lebesgue測度與Lebesgue積分，以及一班的測度與一般的積分。

課程目標 Course Objectives

本課程目標為介紹一般測度空間及其積分。
The purpose of this course is to introduce general measure spaces and integration over these spaces.

	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	具備專業數學知識及邏輯推理能力。Have well-founded expertise in mathematics and be capable of logical reasoning.	●
B	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	○
C	具備獨立思考與解決問題的能力。 Be capable of independent thinking and have the problem-solving skills.	●

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	1. Algebras of sets (1/2)	
2	1. Algebras of sets (2/2)	
3	2. Lebesgue measure theory (1/3)	
4	2. Lebesgue measure theory (2/3)	
5	2. Lebesgue measure theory (3/3)	
6	3. General measurable spaces (1/3)	
7	3. General measurable spaces (2/3)	
8	3. General measurable spaces (3/3)	

9	期中考試週 Midterm Exam	
10	4. The Caratheodory measure induced by an outer measure (1/2)	
11	4. The Caratheodory measure induced by an outer measure (2/2)	
12	5. The constructions of outer measures (1/2)	
13	5. The constructions of outer measures (2/2)	
14	6. Lebesgue integration (1/2)	
15	6. Lebesgue integration (2/2)	
16	7. Integration over general measure spaces (1/2)	
17	7. Integration over general measure spaces (2/2)	
18	期末考試週 Final Exam	

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(含出缺席) General Performance (Attendance Record)									
期中考成績 Midterm Exam	40%								
期末考成績 Final Exam	40%								
作業成績 Homework and/or Assignments	20%								
其他 Miscellaneous (_____)									

評量方式補充說明
Grading & Assessments Supplemental instructions

本課程採用三種公式A、B、C計算下的最大值：
A為作業20%，期中期末各40%。不加分。
B為期中40%，期末60%。不加分。
C為複雜公式如下。
先算原始分數作業20%，期中期末各40%
再加上各項加分後得調整前分數N
最後C=[(N乘以60)^{1/2}]

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.)

Real Analysis 4ed, H. L. Royden & P. M. Fitzpatrick.

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)