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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	複變函數論AA				學年/學期 Academic Year/Semester			
課程名稱(英文) Course Name in English	Complex Analysis							
科目代碼 Course Code	AM3180AA	系級 Department 學三 & Year		開課單位 Course-Offering Department	應用數學系			
修別 Type	學程 Program	學分數/時 Credit(s)/Hou		3	3.0/3.0			
授課教師 Instructor	/黄淑琴							
先修課程 Prerequisite	/#高等微積分(一)/#高等微積分(二)							
課程描述 Course Description								

課程描述 Course Description

複變函數論為理學與工程學系重要基礎課程之一,該學科主要目標是為建立複數平面微分及積分理論,以提供相關領域的研究方法及技巧,其應用範疇包括理論科學、應用科學、航空太空工程、土木工程等各學門。

課程目標 Course Objectives

本課程目的主要幫助學生以直觀的方式了解複變函數論。

The purpose of this course is to help students to gain an intuitive understanding of the subject.

	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	具備基本數學知識及邏輯推理能力。Have well-founded background in mathematics and be capable of logical reasoning.	•
В	具備機率、統計及相關領域的知識與應用能力。Have the knowledge of probability and statistics and the related field, and the corresponding application ability	
С	具備軟體應用與統計計算能力。 Be able to use computer software for statistical computation in real applications.	

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	Complex Numbers and Their Properties	
2	Complex Plane, Polar Form of Complex Numbers	
3	Limits and Continuity	
4	Complex Functions	
5	Exponential and Logarithmic Functions	
6	Differentiability and Analyticity	
7	Analytic Functions	
8	Cauchy-Riemann Equations	

9	期中考試週 Midterm Exam					
10	Real Integrals					
11	Complex Integrals					
12	Independence of Path					
13	Cauchy's Theorem					
14	Cauchy's Theorem					
15	Cauchy's Integral Formulas					
16	Cauchy's Integral Formulas					
17	Some Consequences of the Integral Formulas					
18	期末考試週 Final Exam					
	教學策略 Teaching Strategies					
	授 Lecture					
	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 ■ 産學合作 Industy-Academia Cooperation						
一 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	配分比例	多元評量方式 Assessments							
Items	Percentage	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(含出鉄席) General Performance (Attendance Record)		~	~	~					
期中考成績 Midterm Exam		~							
期末考成績 Final Exam		>							
作業成績 Homework and/or Assignments			~						
其他 Miscellaneous									

評量方式補充說明

Grading & Assessments Supplemental instructions

課堂公佈

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.)

課堂公佈

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)

本課程除了週三的正課之外,所有的修課學生需參加演習課,時間為每週四下午5:10~6:00。