



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	複變函數論		學年/學期 Academic Year/Semester	112/2	
課程名稱(英文) Course Name in English	Complex analysis				
科目代碼 Course Code	AM_74400	系級 Department & Year	博士	開課單位 Course-Offering Department	應用數學系
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)	3.0/3.0		
授課教師 Instructor	/黃顯棟				
先修課程 Prerequisite					

課程描述 Course Description

本課程介紹複變函數分析。內容包括以下主題：

- Complex Differentiability, Cauchy-Riemann Equations
- Power Series
- Cauchy's Theorem, Applications of Cauchy's Integral Formula
- Winding Numbers
- Residue Formula
- Conformal Mappings

課程目標 Course Objectives

本課程目的主要介紹複變函數留數定理及其應用。
The purpose of this course is to introduce residue theory and its applications.

	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	具備專業知識及邏輯推理能力。Have well-founded expertise 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	1.1, 1.2, 1.3	
2	1.4, 1.5	
3	1.6, 1.7	
4	2.1, 2.2	
5	2.4, 2.5	

6	2.6, 2.7	
7	3.1, 3.2	
8	3.3, 3.4	
9	3.5, 3.6	
10	3.7, 4.1	
11	4.2, 4.3	
12	5.1, 5.2	
13	5.3 6.1	
14	6.2, 7.1	
15	7.2, 7.3	
16	7.4, 7.5	
17	Final Exam	
18	Review	

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 Industry-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									
期末考成績 Final Exam									
作業成績 Homework and/or Assignments									
其他 Miscellaneous (Exercise)	100%								

評量方式補充說明

Grading & Assessments Supplemental instructions

本課程評量以作業研討為主：

- 每週有作業。
- 修課同學輪流上台講解。

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.)

Complex Analysis, fourth edition, 1999

- authors: Serge Lang
- publisher: Springer

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)