



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	114/1				
課程名稱(英文) Course Name in English	Complex Analysis								
科目代碼 Course Code	AM_3180AA	系級 Department & Year	學三	開課單位 Course-Offering Department	應用數學系				
修別 Type	學程 Program	學分數/時間 Credit(s)/Hour(s)		3.0/3.0					
授課教師 Instructor	/王昆?								
先修課程 Prerequisite	/#高等微積分(一)/#高等微積分(二)								
課程描述 Course Description									

介紹複變函數分析方面的基礎與應用。內容涵蓋

1. complex numbers
2. analytic functions
3. elementary functions
4. integration in the complex plane
5. series
6. residues
7. applications

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.	●
B	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	
C	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	
2	complex functions	
3	analytic functions	
4	analytic functions	10/29教師節補假
5	analytic functions	10/06中秋假期放假

6	elementary functions	
7	elementary functions	
8	elementary functions	
9	期中考試週 Midterm Exam	11/03期中考
10	integration	
11	integration	
12	integration	
13	series and residues	
14	series and residues	
15	series and residues	
16	期末考試週 Final Exam	12/22日期末考試
17	applications	
18		

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
平時成績(含出缺席) General Performance (Attendance Record)								
期中考成績 Midterm Exam	30%	✓						
期末考成績 Final Exam	30%	✓						
作業成績 Homework and/or Assignments	40%		✓	✓			✓	
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:

J. W. Brown and R. Churchill, Complex Variables and Applications, ninth edition, McGraw-Hill

References:

1. J. Bak and D. J. Newman, Complex analysis, Springer
2. E. B. Saff and A.D. Snider, Fundamentals of complex analysis, third edition, Pearson.
3. D. G. Zill and P. D. Shanahan, A First Course in COMPLEX ANALYSIS with Applications, third edition, Jones and Bartlett Publishers.

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)