



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	微積分(一)		學年/學期 Academic Year/Semester		114/1			
課程名稱(英文) Course Name in English	Calculus(I)							
科目代碼 Course Code	DMSI10050	系級 Department & Year	學一	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	/黃灝勻							
先修課程 Prerequisite								

課程描述 Course Description

In this course, students will be expected to be familiar with:

- (1) Functions, Graphs, and Limits
- (2) Differentiation
- (3) Applications of the Derivative
- (4) Exponential and Logarithmic Functions
- (5) Integration and Its Applications

*** This course will be taught in English ***

Cheating, including using cell phones or other electronic devices during exams, is strictly prohibited. If caught, the exam score will be **zero (0)**. Make-up exams or homework will only be provided if the student has requested a leave in advance with a justifiable reason.

課程目標 Course Objectives

Calculus provides a tool for solving problems involving motion. The derivative is useful in the study of rates of change of many entities. The definite integral also has many applications in the sciences.

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	Chapter 1: Functions, Graphs, and Limits Limits Continuity	
2	Chapter 2: Differentiation The Derivative and the Slope of a Graph Some Rules for Differentiation	
3	Rates of Change: Velocity and Marginals The Product and Quotient Rules Quiz 1	
4	The Product and Quotient Rules The Chain Rule	
5	Higher-Order Derivatives Implicit Differentiation Related Rates	
6	期中考試 Midterm Exam (I)	

7	Chapter 3: Applications of the Derivative Increasing and Decreasing Functions Extrema and the First-Derivative Test Concavity and the Second-Derivative Test	
8	Optimization Problems Business and Economics Applications Asymptotes	
9	Curve Sketching: A Summary Differentials and Marginal Analysis Quiz2	
10	Chapter 4: Exponential and Logarithmic Functions Exponential Functions Natural Exponential Functions	
11	Derivatives of Exponential Functions Logarithmic Functions	
12	期中考試 Midterm Exam (II)	
13	Derivatives of Logarithmic Functions Exponential Growth and Decay	
14	Chapter 5: Integration and Its Applications Antiderivatives and Indefinite Integrals Integration by Substitution and the General Power Rule	
15	Exponential and Logarithmic Integrals Area and the Fundamental Theorem of Calculus Quiz3	
16	Area of a Region Bounded by Two Graphs The Definite Integral as the Limit of a Sum	
17	期末考試 Final Exam	
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 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
平時成績(含出缺席) General Performance (Attendance Record)	10%		✓					
期中考成績 Midterm Exam	60%	✓						
期末考成績 Final Exam	30%	✓						
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.)

Larson/Calculus : An Applied Approach (Metric Edition) / 10e

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)