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## ②国玄東華大學

## 教學計劃表 Syllabus

Cour		名稱(中文) me in Chinese	微積分(一)		學年/學期 Academic Year/Seme	ester	113/1			
課程名稱(英文) Course Name in English Calculus(I)										
		目代碼 rse Code	系級 DMSI10050		學一	開課單位 Course-Offering Department	應用數學系			
修別 Type  學程 Program Page Program Page Program Credit(s)/Hour(s)  3.0/3.								.0		
	授課教師 Instructor /黃灝勻									
	先修課程 Prerequisite									
					e Descrip	tion				
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 ***										
			課	程目標 Cour	se Object:	ives				
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.										
系專業能力 Basic Learning Outcomes							Correl Cours an	課程目標與系專業能 力相關性 Correlation between Course Objectives and Dept.'s Education Objectives		
A 具備以資訊技術協助企業運作與商業管理之知識與應用能力								0		
В	B 具備邏輯思考、問題分析與解決之能力							•		
С	C 具備溝通協調與團隊合作之能力							0		
D	D 具備創新思維之能力							0		
E 具備國際視野及外語溝通之能力								0		
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	備言	備註Remarks					
1	l	Chapter 1: Func Limits Continuity	tions, Graphs, and Limits							
2 Moon Festival			loliday							

	Chapter 2: Differentiation						
3	The Derivative and the Slope of a Graph						
	Some Rules for Differentiation						
	Quiz						
	Rates of Change: Velocity and Marginals						
4	The Product and Quotient Rules						
	The Chain Rule						
	Higher-Order Derivatives						
5	Implicit Differentiation						
	Related Rates						
	Chapter 3: Applications of the Derivative						
	Increasing and Decreasing Functions						
6	Extrema and the First-Derivative Test						
	Concavity and the Second-Derivative Test						
	Quiz						
	Optimization Problems						
7	Business and Economics Applications						
	Asymptotes						
	Curve Sketching: A Summary						
8	Differentials and Marginal Analysis						
	Quiz						
9	期中考試週 Midterm Exam						
10	Midterm Exam Review						
	Chapter 4: Exponential and Logarithmic Functions						
1.1	Exponential Functions						
11	Natural Exponential Functions						
	Derivatives of Exponential Functions						
	Logarithmic Functions						
12	Derivatives of Logarithmic Functions						
12	Exponential Growth and Decay						
1.0							
13	Quiz						
	Chapter 5: Integration and Its Applications						
14	Antiderivatives and Indefinite Integrals						
	Integration by Substitution and the General Power Rule						
	Exponential and Logarithmic Integrals						
15	Quiz						
	Area and the Fundamental Theorem of Calculus						
16	Area of a Region Bounded by Two Graphs						
	The Definite Integral as the Limit of a Sum						
17	期末考試週 Final Exam						
18							

教學策略 Teaching Strategies
課堂講授 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
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	配分比例 Percentage	多元評量方式 Assessments							
Items		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)	30%	>							
期中考成績 Midterm Exam	35%	<b>~</b>							
期末考成績 Final Exam	35%	>							
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)