朝陽科技大學 093學年度第1學期教學大綱
Calculus 微積分

當期課號	1185	Course Number	1185
授課教師	簡蒼調	Instructor	JUAN,CHANG TIAU
中文課名	微積分	Course Name	Calculus
開課單位	資訊管理系(四日)一A	Department	
修習別	必修	Required/Elective	Required
學分數	3	Credits	3
課程目標	本課程之目的在使學生能瞭解微積分的基本原理和應用的技術，課程內容包含1.實數、函數與其圖形 2.導函數與微分 3.微分的應用 4.指數函數與對數函數的微分 5.反導函數和積分的定義 6.三角函數的微分&積分 7.積分技術	Objectives	The main purpose of this course is to let students understand the fundamental principles of the differential integral calculus and its basic techniques of applications. The content involves real numbers, functions and graphs, the derivative and its applications, derivatives of exponential and logarithmic functions, derivative the trigonometric functions, and techniques of integration.
教材	1. 教材課本: Calculus and its Applications / 3ed / Daniel D. Benice 2. 參考書籍: 1.Applied Calculus / Berkey 2.Calculus / James Stewart 第一週 Review：real numbers，algebra functions and graphs 函數與圖形 第二週 Functions in economics. Introduction to limits 極限概念 第三週 Continuity，One－side limits. 連續性，單邊極限 第四週 Limits at infinity，Infinity limits. 無窮極限 第五週 Introduction to derivative，Basic rules for differentiation.微分規則 第六週 Basic rules for differentiation， Rates of change. 變率問題 第七週 Marginal analysis 邊際問題；The product and quotient rules. 第八週 The chain rule of differentiation. 鏈鎖法則 第九週 Mid－term Test 期中考試 第十週 Higher－order derivatives. 高階微分 第十一週 Implicit differentiation.隱函數微分 Differentials. 微分量 第十二週 Increasing and decreasing，增、減函數， critical numbers of functions. 第十三週 Relative extrema and curve sketching極值.與作圖 第十四週 Concavity，the second derivative test，and curve sketching. 二階微分與凹性 Additional applications，applied maximum& minimum. 極大極小應用 Elasticity of demand in economics.經濟學上彈性需求 第十五週 Differentiation of exponential logarithmic functions. 第十六週 Exponential functions and logarithmic functions.指數、對數函數微分 第十七週 Anti-defferentiate. Thefundamental conceptsof integral	Teaching Materials	

	and basic techniques of integral 第十八週 Terminal－Test 期末考試		
成績評量方式	1.平時成績:含隨堂測驗Quiz、出缺勤、學習態度 40 % 2.期中成績：30 % . 3.期末成績： 30 %	**Grading**	1.Ordinary grading:quiz absence from class learning attitude 40% 2.Mid-Examination 30% 3.Terminal-Examination 30%
教師網頁	1.Phone:(H)04-23862188 mobile 0928 930 656 2.E-mail address: chong.tiau@msa.hinet.net		
教學內容	1.復習有關學習微積分的基礎,實數函數 代數運算. 2.極限 單邊極限 連續性 無窮極限. 3.微分 微分的性質 邊際分析. 4.微分的應用:撿驗臨界點 增減函數極值 反曲點繪圖 5.指數函數與對數函數的微分 6.反微分 7.積分基本概念 積分技術.	**Syllabus**	1.Review：Real numbers and Algebra operations，Functions 2.Limits，Continuity，One－side limits，infinite limits，limits at infinity 3.Derivatives，The rules for differentiation，Marginal analysis，Differentials 4.Applications of the derivative：increasing and decreasing、critical numbers、the first derivative test、extrema、the second derivative test、inflection points、graphs and elasticity of demand 5.Differentiation of exponential logarithmic functions 6.Anti-defferentiate. 7.Thefundamental conceptsof integral and basic techniques of integral

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