朝陽科技大學 097學年度第2學期教學大綱
Numerical Methods 數值方法

當期課號	7157	Course Number	7157
授課教師	陳協慶	Instructor	CHEN,HSIEH CHING
中文課名	數值方法	Course Name	Numerical Methods
開課單位	工業工程與管理系碩士班一A	Department	
修習別	選修	Required/Elective	Elective
學分數	3	Credits	3
課程目標	本課程教授數值分析之理論與運算程式之撰寫，使學生能應用程式與數值方法求解數學問題。	Objectives	The aim of this course is to give an introduction to some of the basic methods of numerical analysis and to provide the groundwork for the research in the Institute of Industrial Engineering and Management. The objectives is to let the students to be able to: (1)Write simple programmes to do numerical calculations. (2)Find the approximate solution of various mathematical problems. (3)Compare the performance of different methods for approximating the same problem by considering the accuracy of results and effort required to get them. (4)Understand the concept of convergence in numerical methods.
教材	1.Numerical Mathematics and Computing, 2004, 5th ed., Ward Cheney and David Kincaid. 2.Numerical Methods Using MATLAB, 1999, Jhon H. Mathews & Kurtis D. Fink, 1999, Prentice Hall.	Teaching Materials	1.Numerical Mathematics and Computing, 2004, 5th ed., Ward Cheney and David Kincaid. 2.Numerical Methods Using MATLAB, 1999, Jhon H. Mathews & Kurtis D. Fink, 1999, Prentice Hall.
成績評量方式	1.作業*4(40%) 2.小考*2(20%) 3.期中考(20%) 4.期末考(20%)	Grading	1.Homework*4(40%) 2.Quiz*2(20%) 3.Midterm Exam.(20%) 4.Funal Exam.(20%)
教師網頁	http://www.cyut.edu.tw/~hcchen		
教學內容	(wk1)Error Analysis (wk2)Bracketing Methods for Locating a Root; (wk3)Newton-Raphson and Secant Methods [HW #1] (wk4)Gaussian Elimination, LU decomposition[HW #2] (wk5)Pivoting and Triangular Factorization (wk6)Newton Iteration [HW #3] (wk7)Taylar Series and Lagrange Approximation (wk8)Curve Fitting and Least-squares Line[HW #4] (wk9)Interpolation by spline Function (wk10)Midterm (wk11)Fourier series and expansion (wk12)Numerical Differentiation Formulas (wk13)Composite Trapezoidal and Simpson's Rule [HW #5] (wk14)Minimization of a Function (wk15)Minimization of a Function (wk16)Minimization of a Function	Syllabus	(wk1)Error Analysis (wk2)Bracketing Methods for Locating a Root; (wk3)Newton-Raphson and Secant Methods [HW #1] (wk4)Gaussian Elimination, LU decomposition[HW #2] (wk5)Pivoting and Triangular Factorization (wk6)Newton Iteration [HW #3] (wk7)Taylar Series and Lagrange Approximation (wk8)Curve Fitting and Least-squares Line[HW #4] (wk9)Interpolation by spline Function (wk10)Midterm (wk11)Fourier series and expansion (wk12)Numerical Differentiation Formulas (wk13)Composite Trapezoidal and Simpson's Rule [HW #5] (wk14)Minimization of a Function (wk15)Minimization of a Function (wk16)Minimization of a Function

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