

課程大綱及進度表

開課系所	數學所碩一二
開課學年	100
開課學期	1
課程名稱(中文)	數值分析(一)
課程名稱(英文)	NUMERICAL ANALYSIS(1)
課程碼	L150710
分班碼	
先修科目或先備能力	基礎數值分析 (Elementary Numerical Analysis)
學分數	3
開課教師	王辰樹 (Chern-Shuh Wang)
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Office Hours	By Appointment
課程概述(中文、英文)	An Introduction to Numerical Algorithms for Linear Systems and Least Squares Problems
教學目標	To learn some elementary knowledge related to the numerical linear algebra, especially, numerical solvers for the linear systems and least squares problems.
授課課程大綱明細	<ol style="list-style-type: none"> (1) Basic Matrix Analysis (2) SVD and Sensitivity Analysis of Square Linear System (3) LU factorization and General Linear Systems (4) Gaussian Elimination and Iterative Refinement for Accuracy (5) Special Linear Systems (6) Orthogonalization and Least Squares

	<p>Problems</p> <p>(7) Iterative Methods for Linear Systems: Standard Splitting Iteration</p> <p>(8) Jacobi and Gauss-Seidel Iterations and Successive Over Relaxation (SOR)</p> <p>(9) Krylov-based Iterative Methods</p>
參考書目	<p>(1) Matrix Computation, 3rd ed., 1996, by Charles Van Loan and Gene Golub.</p> <p>(2) Lecture Note on Matrix Computation, 2008, by Wen-Wei Lin.</p>
課程要求	<p>1. 需出席上課</p> <p>2. 作業習題需親力親為</p>
評量方式	<p>1. 平時成績 (含上課出席與習題作業) 佔 40%</p> <p>2. 期中考試佔 30%</p> <p>3. 期末考試佔 30%</p>
課程網址	<p>http://www.math.ncku.edu.tw/~cswang/NumAnaly2011fall.html</p>
助教資訊	<p>洪晟芳(應數所碩二), office: Room206, Math. Build.</p>
備註	