## 課程大綱及進度表

開課系所	Math
開課學年	99
開課學期	2
課程名稱(中文)	線性代數 (一)
課程名稱(英文)	LINEAR ALGEBRA(1)
課程碼	C111210
先修科目或先備能	高中數學
カ	
學分數	3
開課教師	
e-mail	nienpig@mail.ncku.edu.tw
電話	65146
Office Hours	By Appointment
課程概述	1: Vectors Spaces 2: Linear Transformations and Matrices 3: Elementary Matrix Operations and Systems of Linear Equations 4: Determinants
教學目標	Introduction to basic topics and techniques in linear algebra.
授課課程大綱明細	Chapter 1 Vector Spaces
	1.1 Introduction 1.2 Vector Spaces
	1.3 Subspaces
	<ul><li>1.4 Linear Combinations and Systems of Linear Equations</li><li>1.5 Linear Dependence and Linear Independence</li></ul>
	1.6 Bases and Dimension
	1.7*Maximal Linearly Independent Subsets
	Chapter 2 Linear Transformations and Matrices
	2.1 Linear Transformations, Null Spaces, and Ranges
	2.2 The Matrix Representation of a Linear Transformation
	2.3 Composition of Linear Transformations and Matrix Multiplication

2.5 The Change of Coordinate Matrix 2.6*Dual Spaces  Chapter 3 Elementary Matrix Operations and Systems of Linear  Equations  3.1 Elementary Matrix Operations and Elementary Matrices 3.2 The Rank of a Matrix and Matrix Inverses 3.3 Systems of Linear EquationsTheoretical Aspects 3.4 Systems of Linear EquationsComputational Aspects  Chapter 4 Determinants  4.1 Determinants of Order 2 4.2 Determinants of order n 4.3 Properties of Determinants 4.4 SummaryImportant Facts about Determinants 4.5 A Characterization of the Determinant  Fext book: Linear Algebra, Fourth Edition by S. Friedberg, A. Insel, and L. Spence (See http://math.illinoisstate.edu/linalg/www.html ) Also, download free book at: http://www.math.brown.edu/-treil/ by Sergei Treil (for reference).  \$### \$## \$## \$## \$## \$## \$## \$## \$## \$		2.4 Invertibility and Isomorphisms
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