南台科技大學 102 學年度第 1 學期課程資訊

課程名稱	工程數學(一)
課程編碼	20D06504
系所代碼	02
開課班級	四技醫電二甲
開課教師	陳培展
學分	3.0
時數	3
上課節次地點	五 1 2 3 教室 K411
必選修	必修
課程概述	本課程為必修一學年課程,分上下學期分別授課.上學期主要為微分方程,Laplace Transform,向量為三大主要部份.上課主要方式為定理及例題之講解及演算為主每章結束後均有作業之練習
課程目標	提供電機工程師所需與應用的微積分之後的數學知識，並透過計算層面來探討理論及實務
課程大綱	1.Introduction to Different Equation (a) Definition and Terminology (b) Initial-Value Problem (c) Differential equipment as mathematical Models 2.First-Order Differential Equations (a) Separable Variables (b) Linear equation(integral factor) (c) Exact equation (d) Solution by substitutions (e) Linear Models 3.High-Order Differential Equations (a) Linear equation (b) Reduction of order (c) Homogenous equation with constant coefficient (d) Undetermined coefficient (e) Variation of parameters (f) Cuachy-Euler equation (g) Linear models- with initial value problem (h) Linear models- with boundary value problem Midterm test 4.The Laplace Transform (a) Definition (b) The inverse transform

	(c) ranslation Theorems (d) Additional operational properties (e) Dirac Delta function 5.Vectors (a) Vector in 2-D space (b) Vector in 3-D space (c) The Dot product (d) The Cross product (e) Vector Space Final test
英文大綱	1.Introduction to Different Equation (a) Definition and Terminology (b) Initial-Value Problem (c) Differential equipment as mathematical Models 2.First-Order Differential Equations (a) Separable Variables (b) Linear equation(integral factor) (c) Exact equation (d) Solution by substitutions (e) Linear Models 3.High-Order Differential Equations (a) Linear equation (b) Reduction of order (c) Homogenous equation with constant coefficient (d) Undetermined coefficient (e) Variation of parameters (f) Cuachy-Euler equation (g) Linear models- with initial value problem (h) Linear models- with boundary value problem Midterm test 4.The Laplace Transform (a) Definition (b) The inverse transform (c) ranslation Theorems (d) Additional operational properties (e) Dirac Delta function 5.Vectors (a) Vector in 2-D space (b) Vector in 3-D space

	(c) The Dot product (d) The Cross product (e) Vector Space Final test
教學方式	
評量方法	
指定用書	Advance Engineering Mathematics
參考書籍	1.“Advanced Engineering Mathematics—5nd Edition” Peter V. O’Nell 2.工程數學 許世壁 邱創雄 普林斯頓國際有限公司
先修科目	微積分
教學資源	
注意事項	先修微積分
全程外語授課	0
授課語言 **1**	華語
授課語言 **2**	
輔導考照 **1**	
輔導考照 **2**	