

南臺科技大學 105 學年度第 1 學期課程資訊

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| 課程名稱 | 工程數學 |
| 課程編碼 | 20N1AC01 |
| 系所代碼 | 02 |
| 開課班級 | 夜二技電機三甲 |
| 開課教師 | 楊弘吉 |
| 學分 | 3.0 |
| 時數 | 3 |
| 上課節次地點 | 三 12 13 14 教室 J105 |
| 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 | |
| 課程大綱 | <p>1.Introduction to Different Equation</p> <p>(a) Definition and Terminology</p> <p>(b) Initial-Value Problem</p> <p>(c) Differential equipment as mathematical Models</p> <p>2.First-Order Differential Equations</p> <p>(a) Separable Variables</p> <p>(b) Linear equation(integral factor)</p> <p>(c) Exact equation</p> <p>(d) Solution by substitutions</p> <p>(e) Linear Models</p> <p>3.High-Order Differential Equations</p> <p>(a) Linear equation</p> <p>(b) Reduction of order</p> <p>(c) Homogenous equation with constant coefficient</p> <p>(d) Undetermined coefficient</p> <p>(e) Variation of parameters</p> <p>(f) Cuachy-Euler equation</p> <p>(g) Linear models- with initial value problem</p> <p>(h) Linear models- with boundary value problem</p> <p>Midterm test</p> <p>4.The Laplace Transform</p> <p>(a) Definition</p> <p>(b) The inverse transform</p> |

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| | <p>(c) translation 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</p> |
| <p>英文大綱</p> | <p>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) translation Theorems (d) Additional operational properties (e) Dirac Delta function 5.Vectors (a) Vector in 2-D space (b) Vector in 3-D space</p> |

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| | (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 | 工程數學精要 |
| 參考書籍 | |
| 先修科目 | |
| 教學資源 | |
| 注意事項 | |
| 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 | |