

# 98-1 Preliminary Syllabus, Da-Yeh Univ

Information			
Title	應用數學方法	Serial No. / ID	2369 / ADR5068
Dept.	機械與自動化工程學系博士班	School System / Class	研究所博士班1年1班
Lecturer	蔡明訓	Full or Part-time	兼任
Required / Credit	Optinal / 3	Graduate Class	NO
Time / Place	(五)567 / H228	Language	English

## Introduction

Let students master the applications of applied mathematics methods to mechanical, solid and fluid mechanics, vibration, electrical circuits, heat transfer, wave propagation. Learn how to apply mathematics in the fields of mechanical, electrical, and civil engineering. Use the applied mathematics methods to obtain the approximate solution for the governing partial or ordinary differential equations. The contents of curriculum mentioned above comply with our department ' s educational objects (article A1.1, A1.2, A2.1, A3.1, A3.2, A3.3)、 the cultivation of core capability (article B1, B2, B3, B4, B7) 、 the specialty of curriculum (article C1, C2, C3).

## Outline

1. Ordinary Differential Equations including the Laplace Transform.
2. Vectors and Linear Algebra, Vector Analysis
3. Systems of Differential Equations
4. Fourier Analysis, Orthogonal Expansion
5. Partial Differential Equations : The Wave Equation、 The Heat Equation、 The Potential Equation
6. Complex Variable.

## Prerequisite

1. Calculus
2. Engineering Mathematics