

# 100-2 Preliminary Syllabus, Da-Yeh Univ

Information			
Title	壓電材料原理與應用	Serial No. / ID	1922 / ADR5060
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	鄭江河	Full or Part-time	專任
Required / Credit	Optinal / 3	Graduate Class	No
Time / Place	(二)ABC /	Language	English

**Introduction**

Theory and Application of Piezoelectric Materials is a fundamental course connecting theory and applications with practical problems. This course will provide students a thorough understanding of the elements of vector and tensor notation, theory of stress, deformation and strain, the linear theory of piezoelectricity, Hamilton ' s principle, material symmetry consideration, ElectroMechanical coupling coefficient and exact solution of piezoelectric. The adequate ability to develop the mathematical model and to analyze the engineering system will be developed.

- Outline**
1. Elements of vector and tensor notation
  2. Theory of stress
  3. Deformation and strain
  4. Electromagnetic equations
  5. The linear theory of piezoelectricity
  6. Hamilton ' s principle
  7. Material symmetry consideration
  8. ElectroMechanical coupling coefficient
  9. Example for the exact solution of piezoelectric

**Prerequisite**

Calculus, Engineering Mathematics, Elasticity