Course Outline

• Title：Engineering Mathematics II (工程數學 II)
• Type：Required for undergraduate students
• Credit：3
• Prerequisite：Physics, Calculus
• Lecturer：Chung Fang
• Description：Engineering Mathematics, differing from pure mathematics, is a kind of applied mathematics that employs rigorous methods to solve the various problems encountered in engineering science. Essentially, for teaching purpose, engineering mathematics consists of four parts, of which the second part, namely the matrix theory, linear algebra and vector calculus will be presented in this lecture. After visiting the course the participants are expected to have a very clear and sound understanding of the disciplines of the above mentioned topics, and are able to apply what they have learned to practical problems.

• Contents：Engineering Mathematics II: Vectors and Linear Algebra
  1. Vectors and Vector Spaces
  2. Matrices and Systems of linear Equations
  3. Determinants
  4. Eigenvalues, Diagonalization, and Special Matrices
  5. Systems of Linear differential Equations
  6. Vector Differential Calculus
  7. Vector Integral Calculus

• Textbook & References：

- Grading Policy:
  1st Midterm exam: 25%, 2nd Midterm exam: 35%, Final exam: 40%

- Office hour:
  AM 10:00 – 12:00, Wednesday, Room 47248, CE Department

- Advanced Courses:
  Engineering Mathematics III
  Engineering Mathematics IV
  Applied Mathematics
  Mechanics and Symmetry