# Department of Mathematics Faculty of Science

**MATH 762 (206762) METHODS OF APPLIED MATHEMATICS II**  **3(3-0-6)  
Prerequisite** MATH 761

**Course Descriptions :**

Vectors and matrices : linear vector spaces and operators, coordinate transformation, diagonalization of matrices, Hilbert spaces. Perturbation : nondegenerate and degenerate theories. Group theory : introduction, discrete and continuous groups,generators, group representation.

**Course Contents** **No. of Lecture Hours**

1. Vectors and matrices 18

- Linear vector space , linear operators

- Matrices

- Coordinate transformations

- Diagonalization of matrices

- Space of infinite dimensionality Hilbert space

2. Perturbation 9

- Nondegenerate theory , Degenerate theory

3. Group theory 18

- Introduction to group theory

- Discrete groups (point groups)

- Continuous group (Lie groups)

- Generators

- Group representation

**Total 45**