# 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**