King Saud University Math Department 1st Semester 1939 – 1940 H

**Math 244 Contents**

Instructor: Dr. Mansour Al-Yazidi Office:2A 153 Bldg 4 Tel: 467-6497

Email: Yazidi@ksu.edu.sa

<http://faculty.ksu.edu.sa/yazidi>

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| --- | --- |
| Matrices* Matrices and Matrix Operations
* Elementary Row Operations
* Inverse of Matrix
* Special Matrices
 | Inner Product Spaces* Definition of Inner Product
* Orthogonality
* Orthonormal Basis
 |
| Determinants* Definition of Determinant
* Properties of Determinants
* The Adjoint Matrix
 | Linear Transformations* Basic Properties
* Kernel and Image of Linear Transformation
* Matrix of Linear Transformation
 |
| Systems of Linear Equations* Gauss and Gauss–Jordan Methods
* Homogeneous systems of linear equations
* Cramer’s Rule
 | Eigenvalues and Eigenvectors & Diagonalization-Eigenvalues and Eigenvectors-Diagonalization |
| Vector Spaces* Definition of a Vector Space
* Subspaces
* Linear Combination and Spanning Sets
* Linear Dependence & Linear Independence
* Basis and Dimension
* Coordinates and Change of Basis
* Rank of the Matrix
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**Textbook**: Elementary Linear Algebra (Anton and Rorres), 11th edition

**Evaluation**: 1st Midterm: 25%- 2nd Midterm : 25% - Exercise: 10% - Final Exam: 40%

Exam Dates:

1st Exam: xx/xx/2018 7:00 – 8:30 PM

2nd Exam: xx/xx/2018 7:00 – 8:30 PM

Calculators are Not Allowed in Exams