

**Math - 107**  
**Vectors and Matrices (3+0) credit-hours.**  
**Second Semester 1431– 1432 H**  
**Weekly Course Details**

**Linear Algebra**

**WEEK 1,2**

System of Linear Equations

**WEEK 3**

Matrices

**WEEK 4**

Determinant

**WEEK 5**

Minor and cofactors, Inverse by cofactors and  
Cramer' Rule

**Vector and Several Variables Calculus**

**WEEK 6, 7, 8**

Vectors , dot and cross products,  
Equations of line and plane and surfaces,  
Cylindrical and spherical co-ordinates.

**WEEK 9, 10**

Vector-Valued Functions.

**WEEK 11,12,13**

Functions of Several Variables and Differentiation.

**WEEK 14**

Extrema of Functions of Several Variables ,  
Constrained Optimization and Lagrange Multipliers.

**WEEK 15**

**Revision WEEK**

**Textbook(s)/ Additional Material**

1. Linear Algebra by H. Anton ( any book on Linear Algebra from Library 512.5 )
2. Calculus by Swokowski, Olinick and Pence, 6<sup>th</sup> Ed, PWS publishing Co. ( any book on Calculus from Library 515.15 )

**Additional Material:**

**Lecture Notes on**

**Linear Algebra, Vector and Several Variables Calculus**  
**by Khawaja Zafar Elahi**

<b><u>Midterm Examination I:</u></b>	Sunday 22.04.1432	Material covered in 1 <sup>st</sup> to 6 <sup>th</sup> week
<b><u>Midterm Examination II:</u></b>	Sunday 05.06.1432	Material covered in 7 <sup>th</sup> to 13 <sup>th</sup> week

For announcement regarding course and for previous Exam papers, ...  
check web page

**<http://faculty.ksu.edu.sa/khawaja/default.aspx>**