

Course Name	Course Code	Contact Hours			Year	Level	Prerequisite
		Lectures	Sec/Lab	Credit Hours			
Matrix Algebra	Math 106	3	-	3	1	2	Non

Course Summary:

Applied Statistics is an important course in Mathematics, enables the student to use statistics in solving statistical problems such as industry, economy, agriculture, planning and others.

General Course Objectives:

After finishing the course, the student is expected to be familiar with the following:

- Matrices and algebraic operations,
- Linear equation systems and its solutions.
- Linear space and subspace and its examples.

Course Description:

- **Concept of matrix**, rank of matrix, types of matrices, basic algebraic operations on matrices, invers of square matrix $P_{2 \times 2}$ and $P_{3 \times 3}$.
- **Determinants** and their properties and methods of calculation.
- **Linear equation systems** homogeneous and non-homogeneous.
- **Solving methods Linear equation systems** : (Gauss method, simple row method, Cramer method).
- **Eigenvalues and Eigenvectors of matrices**
- **Linear Space and subspace**

Course Assessments:

- First mid-term exam 20%
- Second mid-term exam 20%
- Quizzes and home work 10%
- Final exam 50%

Methods of Teaching the Course:

- Academic lectures
- JUMP
- Homework
- Assign students to prepare scientific projects
- Scientific discussions
- The use of mini-model of education

Text Book:

- Howard Anton and Chris Rorres, Elementary Linear Algebra, Ninth Edition

Scientific References:

- Precalculus, Custom Edition Barnett, Ziegler and Blenn, McGraw Hill, (2009).
- Algebra and Trigonometry, R.E.Larson, R.P. Hostetler, 6th Edition, Houghton Mifflin Company, (2004).
- College Algebra and Trigonometry, R. Aufmann, V. Baker and R.Nation, 4th Edition, Houghton Mifflin Company, (2003)