Institute of Computer Science/Information Technology (ICS&IT)
Faculty of Management Sciences & CS/IT (FMCS)
The University of Agricultural Peshawar

Program: BS(CS)-2
 Course Name: Linear Algebra
Course Code: MT-411
Credit Hours: 03
Course Week: 16
Total Hours: 48

Course Objectives
        This course is designed for the students so that they can use techniques and concepts of linear algebra in practical problems. This course will give them complete knowledge of matrices and determinants and their application in computer related problems. They will get a complete idea of different spaces (2-space,3-space and n-space). They will also have knowledge of vector products and will be able to apply it practically.

Week-I
  -    Introduction to System of Linear Equation.

Week-2
        -Solution to System of Linear Equation..

Week-3
        - Matrices
        -Operations on Matrices.
Week-4
        - Transpose of Matrices
            - Invertible of Matrix.

Week-5
        -Determinants
        - Minors and Cofactors.
Week-6
        -Vectors in 2. Spaces

Week-7
        - Cross Product of Vectors
        - Scalar Triple Product

Week-8
        - Real Vector Space

Week-9
        - Subspace

Week-10
        - Linear Transformation

Week-11
        - Inner Product

Week-12
   - Orthogonality

Week-13
   - Eigen Values and Eigen Vectors.

Week-14
   - Liner Independence

Week-15
   - Application of System of Equations and Geometry

Week-16
   - Presentations

Total Marks: 100

<u>Recommended Books</u>
1. Elementary Linear Algebra with application 9th edition Bernard, K. David, H. 200. Prentice Hall PTR
2. Strang's Linear Algebra ad its Applications, 4th edition. Gilbert, S. Strand, B. Coonley. Andy, B. Andrew, B.2005. Brooks/Cole.
3. Elementary Linear Algebra: Applications Howard. A. Chris. 2005. Version, 9th edition.