# MT- 203 Linear Algebra

# Program : BSCS Semester: 111 Credit Hour : 3 Instructor : Sana Zahra

# Department: Mathematics Course : Linear Algebra

# File Type : Video Lectures.

# Data to put on OCD:

## Related URL Links for OCD:

1. **System of Linear Equations (theory)**

[**https://youtu.be/csgNflj69-Y**](https://youtu.be/csgNflj69-Y)

1. **Elimination Method for solving of system of Linear Equations**

[**https://youtu.be/HL2fDIOMLJ0**](https://youtu.be/HL2fDIOMLJ0)

1. **Introduction to Matrices**

[**https://youtu.be/yRwQ7A6jVLk**](https://youtu.be/yRwQ7A6jVLk)

1. **Types of Matrices**

[**https://youtu.be/4lAyqscuTc8**](https://youtu.be/4lAyqscuTc8)

1. **Matrix Multiplication**

[**https://youtu.be/vzt9c7iWPxs**](https://youtu.be/vzt9c7iWPxs)

1. **Dot product or Inner Product Of Matrix**

[**https://youtu.be/RRyMUmheYlw**](https://youtu.be/RRyMUmheYlw)

1. **Properties of Matrix Addition.**

[**https://youtu.be/Urh8epYPOsM**](https://youtu.be/Urh8epYPOsM)

1. **Properties of Matrix Multiplication**

[**https://youtu.be/Wv7RDhM1KYg**](https://youtu.be/Wv7RDhM1KYg)

1. **Properties of Scalar Multiplication**

[**https://youtu.be/souyvnZvMdg**](https://youtu.be/souyvnZvMdg)

1. **Understanding Matrix and Matrix Notation (theory)**

[**https://youtu.be/y6bVhgmy2rw**](https://youtu.be/y6bVhgmy2rw)

1. **Solving Linear Equations By Matrices**

[**https://youtu.be/C2QI3eeIiVc**](https://youtu.be/C2QI3eeIiVc)

1. **Gaussian Elimination Method , Gauss – Jordan Elimination Method**

[**https://youtu.be/AhUyh-2aPEc**](https://youtu.be/AhUyh-2aPEc)

1. **Finding Inverse Of the matrix**

[**https://youtu.be/Fg7\_mv3izR0**](https://youtu.be/Fg7_mv3izR0)

1. **Finding Determinant of 3x3 Matrix**

[**https://youtu.be/V3e7m-qFDFU**](https://youtu.be/V3e7m-qFDFU)

1. **Prperties of Determinant**

[**https://youtu.be/CdEzFo-nOtY**](https://youtu.be/CdEzFo-nOtY)

1. **Co Factor Expansions with applications**

[**https://youtu.be/ZAECu1mkFY8**](https://youtu.be/ZAECu1mkFY8)

1. **Finding the Inverse of a 3 x 3 Matrix using Determinants and Cofactors**

# <https://youtu.be/YvjkPF6C_LI>

# Vectors in Plane and Space

# <https://youtu.be/4rc3JG4HNSM>

# Properties of Vectors

# <https://youtu.be/JaB98fh-jiY>

# Definition and Examples of vector space:

# <https://youtu.be/1XlT3Y2oyAU>

# Definition and Examples of Subspace:

# <https://youtu.be/y_PHA3szo5s>

# Definition and Examples about Linear Independent and Linear Dependent:

# <https://youtu.be/rDrQH9ma82o>

1. **Spanning set of Vectors**

[**https://youtu.be/NFiaXqc1dgc**](https://youtu.be/NFiaXqc1dgc)

1. **Basis and Dimension theory and examples.**

[**https://youtu.be/Pc2dWW3aSrk**](https://youtu.be/Pc2dWW3aSrk)

1. **Rank and Nulity of a Matrix**

[**https://youtu.be/eXuWiPRSlUE**](https://youtu.be/eXuWiPRSlUE)

1. **Cordinates w.r.t. Basis**

[**https://youtu.be/uvgru6FcyxU**](https://youtu.be/uvgru6FcyxU)

1. **Change of Basis**

[**https://youtu.be/HZa1RwFHgwU**](https://youtu.be/HZa1RwFHgwU)

1. **Orthonormal Basis**

[**https://youtu.be/7BFx8pt2aTQ**](https://youtu.be/7BFx8pt2aTQ)

1. **Orthognal Basis**

[**https://youtu.be/FdmppxbMf3g**](https://youtu.be/FdmppxbMf3g)

1. **Orthogonal Compliment**

[**https://youtu.be/Kpc5ELrOt5E**](https://youtu.be/Kpc5ELrOt5E)

1. **Eigen Values and Eigen Vectors**

[**https://youtu.be/TQvxWaQnrqI**](https://youtu.be/TQvxWaQnrqI)

1. **Diagonalization of Matrices**

[**https://youtu.be/ieWyx2mlZyk**](https://youtu.be/ieWyx2mlZyk)

1. **Diagonalization of symmetric matrices**

[**https://youtu.be/\_j8vJbCY3No**](https://youtu.be/_j8vJbCY3No)

1. **Linear transformation theory and examples**

[**https://youtu.be/1fLxcBJB\_t8**](https://youtu.be/1fLxcBJB_t8)

1. **Kernel and range of Linear Transformation**

[**https://youtu.be/r7ZsD95gcEE**](https://youtu.be/r7ZsD95gcEE)

1. **Matrix of Linear Transformation and Examples**

[**https://youtu.be/PxtNLpTyKnI**](https://youtu.be/PxtNLpTyKnI)

[**https://youtu.be/E\_xvdSgczMA**](https://youtu.be/E_xvdSgczMA)