LINEAR ALGEBRA (MA4020) (3-credits)

Syllabus.

- Matrix Operations.

  { System of linear equations, elementary operations, row-reduced echelon matrices, gaussian elimination.

- Vector spaces.

  { Vector space, subspaces, direct sums, bases and dimension.

- Linear transformations

  { Linear maps, rank-nulity theorem, the matrix of a linear transformation.

- Eigenvalues and eigenvectors, invarient subspaces upper triangular matrices, diagonal matrices.

- Inner products, norms, orthonormal bases, Gram-schmidt process, schur's theorem, orthogonal projections, Linear functionals.

Characteristic polynomial, Cayley-Hamilton theorem, the minimal polynomial, Jordon form.

References.

Chapter 1 / Chapter 3 & 4

1. ALGEBRA by Michael Artin.
[Prentice-Hall, 1991]

Done

2. Linear Algebra ~~Done~~ Right by Sheldon Axler.
[Undergraduate Texts in Mathematics, Springer]
2nd edition.

3. Linear Algebra by K. Hoffmon and R. Kunze.
[2nd edition]

4. Linear Algebra by Serge Lang
[Undergraduate Texts in Mathematics, Springer]
[3rd edition]

Pre-requiste.

Elementary set theory, Proof/Disprove (Statement)

Lecture schedule. Slot - S { Tuesday. 4pm - 5:25 pm
Friday. 2:30 pm - 4 pm.

August	Sep	Oct	Nov.	Dec.
17th, 20th, 24th, 27th, 31st	3rd, 7th, 10th, 14th, 17th, 24th 28th	1st, 5th, 8th, 12th, 22nd, 26th	2nd, 5th, 9th, 12th, 16th, 23rd, 26th, 30th	3rd

Total 27 Lectures.

Evaluation.

Attendance. 10% weightage.

Grading policy.