Code	Subject Title		Cr. Hrs	Semester
MATH-224	Linear Algebra		3	IV
Year	Discipline			
2	Physics			

Vector space, linear dependence, dimensionality, inner product, Hilbert space, linear operators, Gram-Schmidt method, matrices, addition, multiplication, division, derivatives and integrals of matrices, partition of matrices, elementary row operations, systems of linear equations, transpose, unitary and hermitian matrices, eigenvalues and eigen vectors, diagonalization, singular matrix, trace of a matrix, determinants, Cramer's rule, inverse matrix, linear transformation.

Groups, subgroups, homomorphism and isomorphism, group representation, reducible and irreducible representations, Schurs lemma.

Books Recommended:
1. *Advanced Engineering Mathematics* by E. Kreyszig, Wiley, New York, 1999.
2. *Mathematical Methods for Physicists* by G. B. Arfken and H. J. Weber, A Press, New York, 1995.
3. *Mathematical Methods for Physics and Engineering* by K. F. Riley, M. P. Hobson and S. J. Bence, Cambridge University Press, 1997.