



## MATHEMATICS 213 "HONOURS LINEAR ALGEBRA I"

**Calendar Description: H(3-1T)**

Systems of equations and matrices, vectors, linear transformations, determinants, eigenvalues and eigenvectors.

**Prerequisite:** A grade of 70% or higher in Pure Mathematics 30.

**Note:** Credit for both Mathematics 211 or 221 and 213 will not be allowed.

### *Syllabus*

<u>Topics</u>	<u>Number of Hours</u>
Systems of linear equations, matrices, reduced row echelon form matrix multiplication, inverses.	8
Vector spaces, subspaces, bases and dimension.	4
Linear transformations, kernel and image, isomorphism, matrix representation, linear functionals.	8
Determinant functions, permutations, uniqueness of determinants, properties of determinants.	8
Eigenvalues, eigenvectors, characteristic polynomials.	6
Optional topics.	2
<b>TOTAL HOURS</b>	<b>36</b>

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