MATHEMATICS 411
"LINEAR SPACES WITH APPLICATIONS"

Calendar Description: H(3-1T)
Linear operators and matrices. Jordan forms. Eigenvalue problems. Quadratic forms. Applications.

Prerequisite: Mathematics 311 and one of Mathematics 353, Applied Mathematics 309 or Mathematics 331.

Syllabus

Topics	Number of Hours
Fields, algebras, vector spaces	4
Linear transformations, functionals, matrix representation	5
Characteristic polynomials, similarity	5
Jordan forms	6
Inner product spaces, adjoint operators, Hermitian and unitary operators	7
Bilinear and quadratic forms	5
Applications and decompositions: LU, QR, SVD, pseudoinverse matrix	4
TOTAL HOURS	**36**

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