APPLIED MATHEMATICS 433
"Mathematical Methods in Physics"

Calendar Description: H(3-1T)
Complex analysis and residue integrals. Fourier analysis. Laplace transforms. Vector spaces. Eigenvalues and eigenvectors. Extensive physical applications.
Prerequisite: Applied Mathematics 307 or 311 or Physics 341, Applied Mathematics 309 or Mathematics 353 or 331.

Syllabus

Topics	Number of Hours
Matrices: eigenvalue problem, diagonalization, similarity, Cayley-Hamilton, change of basis vectors, rotations, orthogonal and unitary matrices	5
Normal Modes of Oscillating systems	2
Fourier Series and Fourier Integrals, boundary value problems for physical fields	7
Green's Functions	2
Linear Vector Spaces, Linear Operators, Inner product	4
Complex Analysis, Laurent Series, Residues, Cauchy theorem, Evaluation of real integrals by methods of complex analysis	12
Laplace Transforms and applications	4
TOTAL HOURS	**36**

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