Joint Engineering Mathematics

Courses

J E MATH 3170 Engineering Mathematics: 4 semester hours
Prerequisites: MATH 2020 or equivalent, and Electrical Engineering or Mechanical Engineering major. The Laplace transform and applications; series solutions of differential equations, Bessel’s equation, Legendre’s equation, special functions; matrices, eigenvalues, and eigenfunctions; Vector analysis and applications; boundary value problems and spectral representation; Fourier series and Fourier integrals; solution of partial differential equations of mathematical physics.

J E MATH 3260 Probability and Statistics for Engineering: 3 semester hours
Prerequisites: MATH 2000, and Electrical Engineering or Mechanical Engineering major. Study of probability and statistics together with engineering applications. Probability and statistics: random variables, distribution functions, density functions, expectations, means, variances, combinatorial probability, geometric probability, normal random variables, joint distribution, independence, correlation, conditional probability, Bayes theorem, the law of large numbers, the central limit theorem. Applications: reliability, quality control, acceptance sampling, linear regression, design and analysis of experiments, estimation, hypothesis testing. Examples are taken from engineering applications.