Morehouse College
Math 325 (Applied Mathematics I)

Course Outline

1. Series
   (a) Convergence of infinite series
   (b) uniform convergence
   (c) Fourier Series : modes of convergence and examples
   (d) operations on Fourier Series

2. Applications
   (a) ordinary differential equations; initial/boundary value problems
   (b) self adjoint systems
   (c) Sturm Liouville theory
   (d) eigenvalues and eigenfunctions
   (e) classification of second order partial differential equations
   (f) method of separation of variables

3. Integral transforms and applications
   (a) Fourier Integral : convergence criteria and examples
   (b) Laplace transform : convergence criteria and examples
   (c) applications to ordinary and partial differential equations
   (d) applications to the heat, wave, and potential equations.