Math 35a Syllabus

Infinite Series: Geometric series, convergence and divergence, criteria, conditional convergence,

Power series: intervals of convergence, useful theorems about series, techniques for obtaining expansions.

Fourier series: harmonic motion and wave motion and periodic functions, applications, Fourier coefficients, Dirichlet conditions, complex form of series, various intervals, even and odd functions, Parsevals Theorem

Series solutions of O.D.E.: Legendre Equation, Rodrigue's formula, generating functions for Legendre polynomials, complete sets of orthogonal polynomials, power series method of Frobenius, Bessels equation, orthogonality of Bessels functions, Hermite functions, Laguerre functions, ladder operators

Solving Partial Differential Equations of Physics: separation of variables, Fourier techniques,

Calculus of Variations: Euler equation and using it, the brachistochrone problem, cycloids, Lagrange's equation, isoperimetric and other problems


Grading: grades based on homework, midterm and a final.

Success in the course depends essentially on doing the homework well, and moreover spending a minimum of 9 hours of study time per week in preparation for class (readings, papers, discussion of sections, preparation for exams, etc.)

Contact: office phone 63055, email: adler@brandeis.edu, office# Goldsmith, Room 316

Disabilities: If you are a student with a documented disability on record at Brandeis and wish to have a reasonable accommodation made for you, please see me a.s.a.p.