MATHEMATICS 151C

ADVANCED CALCULUS III

Texts: (1) *Principles of Mathematical Analysis, Third Edition*, by W. Rudin
(2) *Calculus on Manifolds*, by M. Spivak

This is the final course in a three quarter sequence giving a rigorous development of mathematical analysis. Topics covered in the sequence include the real and complex number systems, sequences and series, continuity, differentiation, the Riemann-Stieltjes integral, sequences and series of functions, functions of several variables, and an introduction to Lebesgue integration.

TOPICS

SUGGESTED NO. OF
50 MIN. CLASSES

Primitive mappings, partitions of unity, change of variables, differential forms, simplices and chains, integration of differential forms over chains, Stokes' Theorem, the Poincaré Lemma.

Set functions, construction of the Lebesgue measure, measure spaces, measurable functions, simple functions, integration, comparison with the Riemann integral, integration of complex functions, square integrable functions.