



PURE MATHEMATICS 445 "ANALYSIS II"

Calendar Description: H(3-1T)

Euclidean space, basic topology; differentiation of transformations, Implicit Function Theorem; multiple integration, integrals over curves and surfaces; differential forms, Stokes' Theorem.

Prerequisite: Mathematics 353 or 381; and Mathematics 311; and Pure Mathematics 435 or 455, or consent of the Division.

Note: Note open to student with credit in Pure Mathematics 545.

Possible Texts:

R.C. Buck, *Advanced Calculus*, 3ed, McGraw-Hill, 1978.

R.G. Bartle, *The Elements of Real Analysis*, 2ed, John Wiley & Sons, 1976.

K. Hoffman, *Analysis in Euclidean Space*, Prentice-Hall, 1975.

S. Douglas, *Introduction to Mathematical Analysis*, Addison-Wesley, 1996.

Syllabus

<u>Topics</u>	<u>Number of Hours</u>
Series: convergence tests, absolute convergence, conditional convergence, rearrangements, Cauchy product.	6
Sequences and series of functions: pointwise and uniform convergence, Weierstrass M-test, power series.	6
Euclidean spaces: Basic topology, connectedness, compactness; metric spaces.	9
Functions of several variables: limits and continuity.	3
Derivative: linear transformations, differentiability, inverse function theorem, implicit function theorem.	6
Integral: Riemann integral of several variables, Fubini's theorem.	6
TOTAL HOURS	36

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