

W. e. f 2003 - 2004 AB

M 102 - Real Analysis

SX-S 111

UNIT I : Definition and existence of the Riemann Stieltjes integral, Properties of the integral, integration and differentiation - the fundamental theorem of calculus-integration of vector values functions -Rectifiable curves.

Chapter 6 of the textbook.

UNIT II : Sequences and series of the functions - Pointwise and uniform convergences - Uniform convergences and continuity - Uniform convergence and integration - Uniform convergence and differentiation.

Sections 7.1 to 7.18 of the textbook.

UNIT III : The Stone Wierstrass Theorem 7.26 to 7.33 of the textbook Power series - Abel's theorem - inversion in the order of summation - Taylor's theorem - uniqueness of power series.

Sections 8.1 to 8.5 of the textbook.

UNIT IV : Functions of several variables - linear transformation - Derivatives in an open subset of  $\mathbb{R}^n$  - Chain rule - Partial derivatives - The contraction principles - The inverse function theorem - the implicit functions theorem.

Textbook :

Walter Rudin : Principles of Mathematical Analysis (3rd edition) McGraw-Hill, Kogakusha, 1976, International Student Edition.