

SX-S-420- 21

Andhra University
Department of Mathematics
M.Sc Mathematics
IV Semester
Syllabus

2003-2004 AB

M 401 INTEGRATION THEORY

UNIT I

Measure and Integration – Measure spaces – Measurable functions-
Integration-General convergence theorems- signed measures-
The Radon -Nikodym theorem.

Sections 1 to 6 of Chapter 11 of the text book.

UNIT II

The L^p spaces -Outer measure and measurability – the extension theorem-
The Lebesgue stieljes integral- Product measures

Section 7 of Chapter 11 and Sections 1 to 4 of Chapter 12 of the text book

UNIT III

Inner measure, Extension by sets of measure zero-Caratheodary outer
measure- Hausdorff measure

Sections 6 to 9 of Chapter 12 of the text book.

UNIT IV

Measure and topology: Baire sets and Borel sets- the regularity of Baire and
Borel measures- the construction of Borel measures-Positive linear
functionals and Borel measures- bounded linear functionals on $C(X)$

Sections 1 to 5 of Chapter 13 of the text book.

Text book: Real analysis, H.L.Royden, Macmillan Publishing co.inc.
3rd edition, New York, 1988