

Course outline M 580: Measure Theory I

Semester I: 1425-1426

[Note: I taught this course at the Department of Mathematics, Women section, College of Science, King Saud University]

Reference Books:

1. Measure Theory by P. R. halmos, Van Nostrand, Princeton, 1950.
2. Hand Book of Measure Theory, Vol. I, Edited by E. Pap, Elsevier, 2002.
3. An Introduction to Measure and Integration by I. K. Rana, Second Edition, Graduate Studies in mathematics, Vol. 45, American Mathematical Society, 2002.

Material Covered

Rings, Algebras, σ -algebras, Monotone classes.

Measure: Elementary properties, outer measure, extension, completion and approximation theorems, Lebesgue measure, lebesgue-Stieltjes measure, measurable functions, integration with respect to a measure, the main theorems, the convergence of measurable functions, L^p -spaces