

Department of Mathematics
Faculty of Mathematics & Computer Science
M.Sc. (Applied Mathematics), 2nd Semester

Course Code	AM 203
Course Name	Measure & Probability
Course Credit	04

Course Objectives:

This course will familiarize the students with existing relationship between basic probability and advance probability.

Minimum pre-requisite:

Course structure:

Algebra of events, Axiomatic approach of Probability, Sigma field, Borel sets, Measureable sets, Measureable function, Conditional probability, Bernoulli and Generalized Bernoulli trials, Random variables, Classification of random variables, Functions of random variables, Types of Distributions and their properties (Normal, Poisson, Binomial, etc), Independence of random variables, Functions of more than one random variable, Expectations and its properties, Variance and Standard deviation, Moments and Moment generating functions, Correlation, Methods of Indicators, Chebyshev's inequality and the weak law of large numbers, Conditional Expectations together with its density and Distribution functions, Correspondence Theorem, Convolution Theorem, Central Limit Theorem.

Reading suggestions:

- Robert B. Ash, Basic Probability Theory, Dover-2008.
- Robert B. Ash, Probability and Measure Theory, Academic press-2010.

Evaluation and weightage:

- 2-Quiz (10marks) each

- Mid Sem + Final Sem (40marks) each