

BS (4 Years) for Affiliated Colleges



Code	Subject Title	Cr. Hrs	Semester
MATH-416	Measure Theory and Lebesgue Integration	3	VIII
Year	Discipline		
4	Mathematics		

Objectives:

Measurable Sets

- Outer measure, Lebesgue measure
- Lebesgue measurable sets
- Borel sets
- Non measurable sets

Measurable Functions

- Lebesgue measurable functions
- Simple functions, characteristic functions
- Borel measurable function
- Littlewood three principle

The Lebesgue Integration

- Review of the Riemann integral
- Lebesgue integral
- Integral of a non negative function
- Integral of measurable functions
- Convergence in measure

Recommended Books:

- D. Smith, M. Eggen and R. St. Andre, A Transition to Advanced Mathematics, (Brooks, 2001)
- Seymour Lipschutz, Set Theory and Related Topics, (Mc-Graw Hill Book Company, 1999)
- H. L. Royden, Real Analysis, (Macmillan, 1968)
- D. L. Cohan, Measure Theory, (Bir Khauser, 1980)
- P.R. Halmos, Measure Theory, (Von Nostrand, New York, 1950)