

Program: Bachelor's Degree with Honours/Hons. with Research Class: UG		Year: Fourth	Semester: VII
Subject: Mathematics			
Course Code: MN-1D		Course Title: Real Analysis-II	
Course Learning Outcomes: This course will enable the students to: a) Understand the concept of limit & continuity of a function. b) Understand the concept of differentiation and expansion of function with remainder. c) Understand the definition and condition for Riemann Integrability. d) Understand the generalized set operations and relation on sets.			
Credit: 4 (Theory)		Compulsory	
Full Marks: 75		Time: 3 Hours	
Unit	Content		Hours
I	Limit and Continuity: Limit, Continuity, Discontinuities, uniform continuity, properties of functions continuous in closed intervals, Functions of bounded variation.		20 h
II	Derivability, Relationship with continuity, Taylor's theorem, Maclaurin's theorem, remainder after n terms. Power series expansion of $(1+x)^n$, $\sin x$, $\cos x$ and $\log(1+x)$ using suitable remainder after n terms.		20 h
III	Riemann Integration Definition, Darboux's theorem I & II. Integrability condition, particular classes of bounded integrable function primitive, fundamental theorem, first and second Mean value theorem.		20 h
Sessional Internal Assessment (SIA) Full Marks . 25 Marks A. Internal written Examination . 20 Marks (1 Hr) B. Over All Performance including Regularity . 05 Marks			
Books Recommended: 1. Real Analysis by Lalji Prasad 2. Real Analysis by K. K. Jha 3. Principle of Real Analysis: S. C. Malik			