

<b>PROGRAMME NAME:</b> B.Sc.(H) Mathematics Sem III
<b>COURSE NAME:</b> Riemann Integration
<b>SEMESTER DURATION:</b> August to December 2023

<b>WEEK</b>	<b>TOPIC(S)</b>	<b>TEACHING METHODOLOGY ADOPTED/CONTINUOUS INTERNAL EVALUATION</b>
1-2	Definition of upper and lower Darboux sums, Darboux integral, Inequalities for upper and lower Darboux sums.	Classroom teaching
3-5	Necessary and sufficient conditions for the Darboux integrability; Riemann's definition of integrability by Riemann sum and the equivalence of Riemann's and Darboux's definitions of integrability	Classroom teaching through problem Solving
6	Definition and examples of the Riemann-Stieltjes integral	Classroom teaching
7-9	Riemann integrability of monotone functions and continuous functions, Properties of Riemann integrable functions.	Classroom teaching
10	Definitions of piecewise continuous and piecewise monotone functions and their Riemann integrability; Intermediate value theorem for integrals,	Classroom teaching, Evaluation through surprise test and remedial classes for slow learners
11	Fundamental Theorems of Calculus (I and II).	Classroom teaching and discussion of assignment
12-13	Methods of integration: integration by substitution and integration by parts; Volume by slicing and cylindrical shells, Length of a curve in the plane and the area of surfaces of revolution	Classroom teaching, Solving questions of exercises.
14-15	Improper integrals of Type-I, Type-II and mixed type, Convergence of improper integrals, The beta and gamma functions and their properties.	Evaluation through test and viva voce