

SUBJECT: Elementary Real Analysis
COURSE NAME: Bsc Hons MATHEMATICS
SEMESTER : 1

WEEK	TOPIC(S)	TEACHING METHODOLOGY ADOPTED/CONTINUOUS INTERNAL EVALUATION
1-4	Algebraic and order properties of \mathbb{R} , Absolute value of a real number, Bounded above and bounded below sets, Supremum and infimum of a nonempty subset of \mathbb{R} , The completeness property of \mathbb{R} , Archimedean property, Density of rational numbers in \mathbb{R} .	Class assignment and Classroom teaching
5-6	Sequences and their limits, Convergent sequence, Limit theorems.	Ppt on different topics and class test
7-8	Monotone sequences, Monotone convergence theorem and applications.	Classroom teaching
9-10	Subsequences, Bolzano-Weierstrass theorem, Notion of limit superior and limit inferior for bounded sequence with illustrations. Cauchy sequences of real numbers and Cauchy's convergence criterion.	Ppt and class assignment
11-13	Convergence and divergence of infinite series, Sequence of partial sums of infinite series, Necessary condition for convergence, Cauchy criterion	Class test and quiz

	for convergence of series. Tests for convergence of positive term series: Statement of the integral test and convergence of p-series, Basic comparison test, Limit comparison test, Ratio, root and Raabe's tests.	
14-15	Alternating series, Leibniz test, Absolute and conditional convergence	Classroom Teaching and Test