

## MA 3607 — Introduction to Real Analysis (4-0)

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**Prerequisite:** Calculus

**Text:** Elementary Analysis: The Theory of Calculus, by Kenneth A. Ross, 2008, Springer, ISBN 0-387-90459-X.

HOURS	TOPIC	SECTION
2-2	Completeness axiom	4
2-4	Definition of limits and its proof	7-8
3-7	Properties of sequences and limits	9
2-9	Convergence of sequences	10
3-12	Sequences and subsequences	11
1-13	Lim sup and lim inf	12
2-15	Series and convergence tests	14
2-17	Alternating series and integral test	15
2-19	Definition of continuous functions	17
2-21	Properties of continuous functions	18
2-23	Uniform continuity	19
2-25	Limits of functions	20
1-26	Power series	23
3-29	Uniform convergence of sequences and series	24-5
2-31	Differentiation and basic properties	28
2-33	Mean value theorem	29
1-34	l'Hôpital's rule	30
2-36	Taylor's theorem	31
1-37	Differentiation and integration of power series	26
2-39	Riemann integral	32
1-40	Properties of Riemann integral	33
1-41	Fundamental theorem of calculus	34
3-44	Holidays and exams	