Certificate Course Syllabus

Credit Based and Grading System
To be implemented from the Academic year 2020-21

Course	Title	Credits	L/Week
USCMI1O1	Calculus I	1	2

Module	Title	No of credits	No of lectures per week(total 30 lectures)
1	**Preliminaries** Trigonometry, sets, 1-1 and onto functions, conic sections, 3-D surfaces, sketching regions in $\mathbb{R}^2$		2
2	**Real number system** Absolute value function, neighborhoods, deleted neighborhoods, intervals, open sets and closed sets in R. Supremum, Infimum, Archimedes property, Density property.		2
3	**Sequences** Sequences of real numbers, bounded sequences, convergence, Monotonic sequences, Cauchy sequences.		2

4	**Limits and Continuity** Examples on limits and continuity using sequential criteria		2

References (recommended books)

Reference books

1. Real analysis by Goldberg

2. Mathematical analysis vol 1&2 by Apostol

3. Introduction to calculus and analysis vol 1&2 by Courrant and John

4. Intermediate calculus by Protter and Morrey

5. Calculus and analytic geometry by Thomas and Finney.