| 19BSM304T   Analysis-I | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Teaching Scheme** | | | | | **Examination Scheme** | | | | | |
| **L** | **T** | **P** | **C** | **Hrs/Week** | **Theory** | | | **Practical** | | **TotalMarks** |
| | | | | | **MS** | **ES** | **IA** | **LW** | **LE/Viva** | |
| 3 | 1 | -- | 4 | 4 | 25 | 50 | 25 | -- | -- | 100 |

## OBJECTIVES

1.  To give fundamental knowledge of sets, functions and bounds.
2.  To make them understand convergence and divergence of sequence and series.
3.  To make student's familiar with concept of Integrability.

## SYLLABUS

| **Unit-I** | **9** |
|---|---|
| Sets and Elements, operations on sets, functions, real valued functions, equivalence, countability, real numbers, least upper bounds. | |
| **UNIT II** | **10** |
| Definition of sequence and subsequence, limit of a sequence, convergent sequences, divergent sequences, bounded sequences, monotone sequences, operation on convergent sequence, limit superior, limit inferior, Cauchy sequences. | |
| **UNIT III** | **10** |
| Convergence and divergence, Series with non – negative terms, Alternating series, conditional and absolute convergence, conditions for absolute convergence. | |
| **UNIT IV** | **10** |
| Convergence and Divergence of Improper Integrals, Riemann integrability& integrals of bounded functions over bounded intervals, Darboux's Theorem, Equivalent definition of integrability and integrals, Conditions for integrability, Particular classes of bounded integrable functions, Properties of integrable functions, Function defined bya definite integral, Theorems of Integral Calculus (statement only) | |
| **APPROXIMATE TOTAL** | **39 Hours** |

## OUTCOMES

1.  Able to analyze the problem
2.  Applying the mathematics with different aspects.
3.  Developing thought process.

## TEXTS AND REFERENCES

1. Walter Rudin, Principles of Mathematical Analysis(3rd  edition),
    McGraw-Hill international editions, 1976.
2. T.M. Apostol, Mathematical Analysis(2nd edition), Narosa Publishing
    House, New Delhi, 1989.