

**Course Title: Mathematics B-III [ Calculus (II)]****Credit Hours: 4****Sequence and Series**

- Sequences, Infinite series, Convergence of sequence and series
- The integral test, Comparison tests, Ratio test, Root test
- Alternative series, Absolute and conditional convergence
- Power series, Interval and radius of convergence

**Functions of Several Variables**

- Functions of two variables, Graphs of functions of two variables
- Contour diagrams, Linear functions, Functions of three variables
- Limit and continuity of a function of two variables
- The partial derivative, Computing partial derivatives algebraically
- The second-order partial derivative, Local linearity and the differential
- Tangent planes and normal lines
- Optimization, Maxima and minima of a function of two variables
- Lagrange multipliers
- Various methods for finding area and volume surface of revolution

**Multiple Integrals**

- Double integral in rectangular and polar form
- Triple integral in rectangular, Cylindrical and spherical coordinates
- Substitutions in multiple integrals
- Moments and centre of mass

**Evaluation Criteria**

Examination	Type	Marks
Internal Examination	Sessional Work	15%
	Mid-Semester	25%
External Examination	Final Semester	60%

**Recommended Books**

1. Thomas, *Calculus*, 11<sup>th</sup> Edition. Addison Wesley Publishing Company, 2005
2. H.Anton, I. Bevens, S. Davis, *Calculus*, 8<sup>th</sup> Edition, John Wiley & Sons, In. 2005
3. Hughes-Hallet, Gleason, McCalum, et al, *Calculus Single and Multivariable*, 3<sup>rd</sup> Edition John Wiley & Sons, Inc 2002
4. Frank A. Jr, Elliott Mendelson, *Calculus*, Schaum's Outline Series, 4<sup>th</sup> Edition, 1999
5. C.H. Edward and E.D Penney, *Calculus and Analytical Geometry* Prentice Hall, Inc. 1988
6. E.W.Swokoski, *Calculus and Analytical Geometry* PWS Publishers, Boston, 1983