Code	Subject Title	Cr. Hrs	Semester
MATH-131	Calculus (IT)-I	3	I
Year	Discipline		
1	Information Technology		

Objective

This course provides a systematic introduction to the aspects of differential and integral calculus. It provides a sound foundation in calculus for students of Mathematics and Computer Science. Emphasis of the course is on modeling and applications. The following topics will be covered in this course: Number systems, Intervals, Inequalities, Functions, Solving absolute value equations and inequalities, Limits, Continuity, Limits and continuity of trigonometric functions, Slopes and rates of change, the Derivative, Local linear approximation, Differentials, Analysis of functions, Rolle's theorem and Mean value theorem, the indefinite integral, the definite integral, L'Hopital's rule; Integration, First order differential equations and applications, Second order linear homogeneous differential equations, Polar coordinates and Graph sketching, Conic sections in calculus.

Prerequisites

None

Text Book

❖ Anton, Bivens and Davis, *Calculus*, 7th Edition, John Wiley and Sons, 2002. ISBN: 9971-51-431-1

Reference Books

▪ Thomas and Finney, *Calculus with Analytic Geometry,* Addison Wesley 10th Edition, 2001. ISBN: 0201163209
▪ Dennis G.Zill & Michael R. Cullen, *Differential equations with boundary value problems* , 3rd Edition,1992. ISBN: 0534418872
▪ Online Material: www.mathworld.com