Course Number	Course	Credit hours	Prerequisite
0300101	Calculus 1	3	--

Functions: Domain and range, Operations on functions (Geometric and Algebraic), Graphs of functions, Trigonometric functions. Limits: Limits and computational techniques, Limits at infinity, Infinite limits, Vertical and horizontal asymptotes. Continuity. Limits and continuity of trigonometric functions. Derivatives: The derivative and techniques of differentiation, Derivatives of trigonometric functions, The chain rule, Implicit differentiation. Analysis of functions: Increase and decrease, Concavity, Extrema values, Graphs of functions. Applications of the derivative: Roll's theorem, The mean value theorem, L'Hopital's rule. Integration: The indefinite integral, Integration by substitution, The definite integral, The fundamental theorem of calculus. Applications of the definite integral: Area between curves, Volumes, Length of a plane curve, Area of a surface of revolution.