Competency statement

Sr. No.	Area/Topic	Competency statements
1	Mathematical Logic	The student will be able to • identify statement in logic and its truth value • use connectives to combine two or more logical statements • identify tautology, contradiction and contingency by constructing a truth table • examine logical equivalence of statement patterns • find the dual of a statement pattern • form the negation of a statement pattern
2	Matrices	• identify the order of a matrix • identify types of matrices • perform fundamental matrix operations after verifying conformity • perform elementary transformation on rows and columns of a matrix • find the inverse of a matrix using elementary transformations and adjoint method • verify the conditions for a matrix to be Invertible • use matrix algebra to solve a system of linear equations
3	Differentiation	• state standard formulae of differenciation • state and use the chain rule of differenciation • find derivatives using logarithms • find derivatives of implicit functions • find derivatives of parametric functions • understand the notion of higher order derivatives and find second order derivatives
4	Applications of Derivatives	• determine whether a function is increasing or decreasing • apply differenciation in Economics • find maximum and minimum values of a function • solve optimization problems in Commerce and Economics

5	Integration	• understand the relationship between differenciation and integration • use standard formulae of integration • use fundamental rules of integration • use the method of substitution for integration • identify integrals of special types • find integrals using integration by parts • use important formulae of integration • use partial fraction in integration
6	Definite Integration	• understand the relationship between indefinite and definite integrals • remember fundamental theorems of integral calculus • remember properties of definite integrals and use them in solving problems
7	Application of Definite Integration	• find area bounded by specified lines and curves.
8	Differential Equation and Applications	• identify order and degree of a differential equation • form a differential equation • solve a differential equation • use variables separable and substitution methods to solve first order and first degree differential equations • solve homogeneous and linear differential equations • use differential equations to solve problems on growth and decay of populations and assets

INDEX