

COMEDK UGET Syllabus

COMEDK UGET Syllabus for Mathematics

<u>Topics</u>	<u>Chapters</u>
Differential Calculus	<ul style="list-style-type: none"> Polynomials, Rational, Trigonometric, Logarithmic and Exponential Functions Inverse Functions Graphs of Simple Functions Limits Continuity: Differentiation of the Sum, Difference, Product and Quotient of Two Functions Differentiation of Trigonometric, Inverse Trigonometric, Logarithmic, Exponential, Composite and Implicit Functions, Derivates of Order Upto Two. Applications of Derivatives: Rate of Change of Quantities, Monotonic Increasing and Decreasing Functions, Maxims and Minimum Functions of One Variable, Tangents and Normals, Rolle's and Lagrange's Mean Value Theorems.
Circles	<ul style="list-style-type: none"> Standard Form of Equation of a Circle General Form of Equation of a Circle, its radius and centre Equation of a Circle when the End Points of a Diameter are Given. Points of Intersection of a Line and a Circle with the Centre at the Origin and Conditions for a Line to be Tangent to the Circle Equation of the Tangent Equation of a Family of Circles through the Intersection of Two Circles Condition for Two Intersecting Circles to be Orthogonal.
Matrices and Determinants	<ul style="list-style-type: none"> Determinants and Matrices of Order Two and Three Properties of Determinants Evaluation of Determinants Area of Triangles Using Determinants Addition and Multiplication of Matrices Adjoint and Inverse of Matrix Test of Consistency and Solution of Similar Linear Equations using Determinants and Matrices.
Vector Algebra	<ul style="list-style-type: none"> Vectors and Scalars Addition of Vectors Components of a Vector in Two Dimensions and Three Dimensional Space Scalar and Vector Products Scalar and Vector Triple Product Application of Vectors to Plane Geometry
Differential Equations	<ul style="list-style-type: none"> Differential Equations, Ordinary Differential Equation – Their Order and Degree Formation of Differential Equations Solution of Differential Equations by the Method of Separation of Variables. Solution of Homogeneous and Linear Differential Equations and those of type $d^2y = f(x) dx^2$.
Three Dimensional	<ul style="list-style-type: none"> Coordinates of a Point in Space Distance Between Two Points

Geometry	<ul style="list-style-type: none">• Section Formula• Direction Ratios and Direction Cosines• Angle between Two Intersecting Lines• Skew Lines – The Shortest Distance between them and its Equation.• Equations of a Line and a Plane in Different Forms: Intersection of a Line and a Plane, Coplanar Lines, Equation of a Sphere, Its Centre and Radius.• Diameter form of the Equation of a Sphere.
Probability	<ul style="list-style-type: none">• Probability of an Event• Addition and Multiplication Theorems of Probability and their Application• Conditional Probability: Bayes Theorem• Probability Distribution of a Random Variate• Binomial and Poisson Distributions and their Properties.

