COURSE TEACHING STRUCTURE
Course: Advanced Mathematics (22210)

Unit I: Differential Calculus (10Hours & 24Marks)

Sr No	TOPIC	DURATION	TOPIC BASED	MARKING SCHEME
1	Concept of function & its types	1hr	Theoretical & Numerical	-
2	Simple example on functions	1hr	Theoretical & Numerical	2
3	Concept of limits and standard formulae	1hr	Theoretical & Numerical	2
4	Concept of derivative and rule for sum, product, quotient of function	1hr	Theoretical & Numerical	4
5	Chain rule	1hr	Theoretical & Numerical	4
6	implicit and parametric function - derivative	1hr	Theoretical & Numerical	4
7	Derivative of logarithmic, exponential, inverse function	1hr	Theoretical & Numerical	4
8	Equation of tangent and normal	1hr	Theoretical & Numerical	2
9	Maxima and minima	1hr	Theoretical & Numerical	2
10	Radius of curvature	1hr	Theoretical & Numerical	4
UNIT TEST I				

COURSE TEACHING STRUCTURE
COURSE: ADVANCED MATHEMATICS (22210)

Unit II: Integral Calculus (7Hours & 16Marks)

Sr No	TOPIC	DURATION	TOPIC BASED	MARKING SCHEME
1	Introduction to integration - Rules of integration	1 hr	Theoretical & Numerical	-
2	Integration of standard function	1hrs	Theoretical & Numerical	2
3	Integration by parts	2hrs	Theoretical & Numerical	8
4	Integration by substitution	1.5 hrs	Theoretical & Numerical	4
5	Integration by partial fraction	1.5 hrs	Theoretical & Numerical	4
UNIT TEST II				

COURSE TEACHING STRUCTURE
Course: Advanced Mathematics (22210)

Unit III: Application of Definite Integration (7 Hours & 8 Marks)

Sr No	TOPIC	DURATION	TOPIC BASED	MARKING SCHEME
1	Introduction Definite Integral	2 hr	Theoretical & Numerical	3
2	Properties of simple integral	2 hr	Theoretical & Numerical	3
3	Application of integration -Area under curve	1 hr	Theoretical & Numerical	2
4	Application of integration -Area between two curve	1 hr	Theoretical & Numerical	2
5	Application of integration –Volume of revolution	1 hr	Theoretical & Numerical	2
UNIT TEST III				

COURSE TEACHING STRUCTURE
Course: Advanced Mathematics (22210)

Unit IV: First Order Differential Equation (7Hours & 8 Marks)

Sr No	TOPIC	DURATION	TOPIC BASED	MARKING SCHEME
1	Concept of differential equation	30 min	Theoretical & Numerical	-
2	Order and degree of differential equation	30 min	Theoretical & Numerical	4
3	Solution of DE – Variable separable method	2hr	Theoretical & Numerical	4
4	Solution to LDE	2hr	Theoretical & Numerical	4
5	Application of Differential equation	2hr	Theoretical & Numerical	4
UNIT TEST IV				

COURSE TEACHING STRUCTURE
Course: Mathematics (22210)

Unit V: Complex Number and Laplace Transform (10Hours &14 Marks)

Sr No	TOPIC	DURATION	TOPIC BASED	MARKING SCHEME
1	Introduction to complex number	30 min	Theoretical & Numerical	3+2
2	Cartesian, polar and exponential form of complex number	1hrs	Theoretical & Numerical	6
3	Algebra of complex number	2 hrs	Theoretical & Numerical	6+2
4	Laplace transform of standard function	1 min	Theoretical & Numerical	3
5	Properties of Laplace transform	2hr	Theoretical & Numerical	3
6	Inverse Laplace transform	2hr	Theoretical & Numerical	3
7	Laplace transform of derivative	1.5 hrs	Theoretical & Numerical	3
UNIT TEST V				