Lesson Plan of Advanced Calculus

Session: 2023-24

Name of Teacher: Ms. Madhu

Class: BA(Hons.) 1ˢᵗ year 1ˢᵗ Sem

Week 1	
	Introduction to syllabus Preliminaries
Week 2	
	Continuous & discontinuous function Properties of Continuous function Examples and Discussion of Exercise Problems Theorems
Week 3	
	Uniform continuity Examples Exercise The derivative and mean value theorem The chain rule Examples Darboux theorems
Week 4	
	Problems Mean value theorems Examples Problems Lagrange's mean value theorem Examples & Excercise
Week 5	
	Cauchy mean value theorem Examples Taylor's theorems Examples & Exercise Problems
Week 6	
	Indeterminate forms Examples & Discussion of Exercise L' hospital rule Examples & Discussion of Exercise Limit and continuity of function of two variables

Week 7	
	Examples & Exercise Problems Partial differentiation Examples Exercise
Week 8	
	Homogeneous functions Examples and Exercise Problems Total differentiation Examples Implicit functions Examples & Exercise
Week 9	
	Taylors theorem Test Differentiability of functions of two variables Examples Young's theorem Maximum and minimum of a function of two variables Examples & Exercise
Week 10	
	Lagrange's method of undetermined multipliers Examples & Exercise Curves in space Examples & Exercise Equation of a tangent line at a point on a space curve

Week 11	
	Jacobians Examples Exercise
Week 12	
	Beta and Gama functions Examples & Exercise Problems
Week 13	
	Double and Triple integrals Change of order of integration in double integrals. Examples & Exercise Problems
Week 14	
	Volume by triple integrals Triple integration in cylindrical and spherical Co-ordinates. Examples & Exercise Problems
Week 15	
	Dirichlet's integrals Liouville"s extension of Dirichlet's integrals Examples Exercise
Week 16	
	Test & Revision