

# LESSON PLAN

Contact Hour (Cumulative)	Unit No.	Topic	Teaching(*) Methodology	Remarks
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## LESSON PLAN

Subject Name: Linear Algebra and Calculus  
Branch/Semester: I CSD  
Faculty Name: P.E. Satyannarayana.

Subject Code: 23BHT102  
A.Y: 2023-24

Contact Hour (Cumulative)	Unit No	Topic	Teaching Methodology	Remarks
1	I	Introduction to Matrices	PPT & LM	
2	I	Rank by Echelon form & problems	LM & PSM	
3	I	Rank by Normal form & problems	LM & PSM	
4	I	Concept on consistent/inconsistent & Solutions of Non Homogeneous linear system of equations	LM & PSM	
5	I	Solutions of Non Homogeneous linear system of equations	LM & PSM	
6	I	Solutions of Homogeneous linear system of equations Gauss Elimination method	LM & PSM	
7	I	Solution of system of linear system of equations by Gauss Elimination method	LM & PSM	
8	I	Solution of system of linear system of equations by Gauss Seidel Iteration method	PPT & LM	
9	I	Inverse of matrix by Gauss Jordan method	PPT & LM	
10	I	Problems related to above	PPT & LM	
11	I	Problems	PPT & LM	
12	II	Introduction & Properties of Eigen value and Eigen vectors- definition	PPT & LM	
13	II	Problems on Eigen value and Eigen vectors	LM & PSM	
14	II	Cayley - Hamilton theorem	PPT & LM	
15	II	Problems to find inverse and power of matrix	PPT & LM	
16	II	Diagonalization of Matrices by constructing Modal matrix	LM & PSM	
17	II	Properties & Problems	LM & PSM	
18	II	Quadratic Forms- Quadratic Forms to Canonical Form by Orthogonal reduction	LM & PSM	
19	II	Problems on Rank-Nature-Index-Signature.	LM & PSM	
20	II	Problems on Rank-Nature-Index-Signature.	LM & PSM	

\*Black Board / LCD / OHP / Other Method

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Contact Hour (Cumulative)	Unit No.	Topic	Teaching(*) Methodology	Remarks
21	II	Problems related to above		
22	II	Revision	PPT & LM	
23	III	Concepts of Limit, Continuity, Derivability of a function	PPT & LM	
24	III	Rolle's theorem statement and Geometrical Interpretation	PPT & LM	
25	III	Problems on verification of Rolle's theorem	PSM	
26	III	Problems related to above	PSM	
27	III	Lagrange's mean value theorem statement and Geometrical Interpretation	LM & PSM	
28	III	Problems on verification of Lagrange's mean value theorem	LM	
29	III	Problems related to above	LM	
30	III	Cauchy's mean value theorem statement and Geometrical Interpretation	LM	
31	III	Problems on verification of Cauchy's mean value theorem	LM	
32	III	Problems related to above	LM & PSM	
33	III	Taylor's theorem with remainder	LM & PSM	
34	III	Maclaurin's theorem with remainder	LM & PSM	
35	III	Problems and applications related to above	LM & PSM	
36	IV	Basic concepts of Partial derivatives	LM & PSM	
37	IV	Total derivative, chain rule	PPT & LM	
38	IV	Change of variables	LM & PSM	
39	IV	Taylor's series expansion of functions of two variables	PPT & LM	
40	IV	Maclaurin's series expansion of functions of two variables	LM	



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41	IV	Problems related to above	LM
42	IV	Jacobians-Problems	LM & PSM
43	IV	Functionally dependence and Independence	LM
44	IV	Maxima and Minima of Functions of two variables	LM & PSM
45	IV	Method of Lagrange Multipliers	LM & PSM
46	IV	Problems related to above	LM & PSM
47	V	Definition of Integration, Double and triple integrals and concepts	LM & PSM
48	V	Problems on Double Integration	LM & PSM
49	V	Concept on Order of Change Integration & Problems	PSM
50	V	Problems related to above	LM & PSM
51	V	Double integrals in Polar Co-ordinates	PSM
52	V	Change of Variables in Double Integrals	LM & PSM
53	V	Triple Integrals Problems	LM & PSM
54	V	Finding areas and volumes	LM & PSM
55	V	Problems related to above	LM & PSM
56	V	Problems on Cartesian to cylindrical polar	PPT & LM
57	V	Problems on Cartesian to spherical polar	LM
58	V	Problems related to above	PSM
59	V	Problems related to above	LM & PSM
60	V	Rivision	PSM

LM= Lecture Method  
PSM=Problem Solving Method  
PPT=Power Point Presentation

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