

TIKA RAM GIRLS COLLEGE SONIPAT

Lesson Plan Format

Name of Assistant/Associate Professor

Mimansa

Class and Section

M. Sc. IInd Yo. Maths

Subject

Graph Theory

Week 1	Description
15-07-25	
16-07-25	
17-07-25	
18-07-25	
19-07-25	
Week 2	
21-07-25	
22-07-25	
23-07-25	
24-07-25	
25-07-25	
26-07-25	
Week 3	
28-07-25	Def. of Graphs
29-07-25	Introduction of Graphs
30-07-25	Prop. of Graphs
01-08-25	
02-08-25	
Week 4	
04-08-25	Types of Graphs
05-08-25	Theorems on Graphs
06-08-25	Walk
07-08-25	
08-08-25	
Week 5	
11-08-25	Theorems on Walk
12-08-25	Path
13-08-25	Prop. of Path

14-08-25	
Week 6	
18-08-25	Circuit
19-08-25	Theorems on Circuit
20-08-25	Connected Graphs
21-08-25	
22-08-25	
23-08-25	
Week 7	
25-08-25	Disconnected Graphs
26-08-25	Applications of Graphs
27-08-25	Questions
28-08-25	
29-08-25	
30-08-25	
Week 8	
01-09-25	Graph representation
02-09-25	Theorems Kruskal
03-09-25	Isomorphism of Graphs
04-09-25	
06-09-25	
Week 9	
08-09-25	Eulerian path
09-09-25	Theorems Prim's algorithm
10-09-25	Hamiltonian Paths
11-09-25	
12-09-25	
13-09-25	
Week 10	
15-09-25	Shortest Path in Weighted Graph
16-09-25	Theorems
17-09-25	Travelling Salesman Problems
18-09-25	
19-09-25	
20-09-25	

Week 11	
24-09-25	Planar Graphs
25-09-25	
26-09-25	
27-09-25	
Week 12	
29-09-25	Some theorems Que. on above given topic
30-09-25	
01-10-25	
03-10-25	
04-10-25	
Week 13	
06-10-25	Detection of Planarity Kuratowski Theorem
08-10-25	
09-10-25	
10-10-25	
11-10-25	
Week 14	
13-10-25	Graph Colouring
Week 15	
23-10-25	
24-10-25	
25-10-25	
Week 16	
27-10-25	Directed Graphs Trees Tree terminology
28-10-25	
29-10-25	
30-10-25	
31-10-25	
01-11-25	
Week 17	
03-11-25	Rooted labelled trees Prefix Code
04-11-25	

06-11-25	
07-11-25	
08-11-25	
Week 18	
10-11-25	Binary Search Tree
11-11-25	Spanning Tree & Cut Sets
12-11-25	Minimum Spanning Trees
13-11-25	
14-11-25	
15-11-25	
Week 19	
17-11-25	Revision class
18-11-25	Doubt class

TIKA RAM GIRLS COLLEGE SONIPAT

Lesson Plan Format

Name of Assistant/Associate Professor Dr. SONIA

Class and Section M.Sc. (F) year Maths

Subject Functional Analysis

Week 1	Description
15-07-25	
16-07-25	
17-07-25	
18-07-25	
19-07-25	
Week 2	
21-07-25	
22-07-25	
23-07-25	
24-07-25	
25-07-25	
26-07-25	
Week 3	
28-07-25	Introduction : Normed Linear Spaces
29-07-25	Metric on N.L.S
30-07-25	"
01-08-25	"
02-08-25	Completion of N.L.S.
Week 4	
04-08-25	Banach Spaces
05-08-25	Theorem based on Banach Spaces
06-08-25	Subspace of Banach Space
07-08-25	"
08-08-25	"
Week 5	
11-08-25	Holder's inequality
12-08-25	Application of Holder's inequality
13-08-25	"

14-08-25	Minkowski
Week 6	
18-08-25	
19-08-25	
20-08-25	
21-08-25	Completeness of $L_p, 1 \leq p < \infty, \mathbb{R}^n$
22-08-25	Examples of $\mathbb{C}^n$
23-08-25	Incomplete normed spaces
Week 7	
25-08-25	Finite dimensional normed spaces
26-08-25	"
27-08-25	"
28-08-25	
29-08-25	
30-08-25	
Week 8	
01-09-25	Bounded linear transformation
02-09-25	Equivalent formulation of continuity
03-09-25	Spaces of bdd linear transformation
04-09-25	
06-09-25	
Week 9	
08-09-25	
09-09-25	
10-09-25	
11-09-25	Continuous linear functional
12-09-25	"
13-09-25	"
Week 10	
15-09-25	
16-09-25	
17-09-25	
18-09-25	Conjugate spaces
19-09-25	Hahn-Banach extension theorem
20-09-25	"

Week 11	
24-09-25	Riesz representation theorem for bdd. L^p
25-09-25	" on $C[a,b]$
26-09-25	problems.
27-09-25	
Week 12	
29-09-25	
30-09-25	
01-10-25	Second conjugate spaces.
03-10-25	"
04-10-25	Reflexive space
Week 13	
06-10-25	
08-10-25	
09-10-25	Uniform bdd. principle.
10-10-25	Consequences of uniform bdd. principle.
11-10-25	"
Week 14	
13-10-25	Open mapping theorem.
Week 15	
23-10-25	Applications of open mapping theorem.
24-10-25	"
25-10-25	Projection.
Week 16	
27-10-25	Closed Graph Theorem
28-10-25	Introduction of equivalent norms
29-10-25	"
30-10-25	Weak convergence.
31-10-25	Weak convergence & strong convergence
01-11-25	"
Week 17	
03-11-25	Equivalence of finite dimensional spaces.
04-11-25	"

06-11-25	Weak sequential compactness,
07-11-25	Solvability of linear eq's in Banach Theory
08-11-25	"
Week 18	
10-11-25	Compact operators and continuous operators
11-11-25	L.T on a finite compact operator.
12-11-25	"
13-11-25	properties of compact operators
14-11-25	"
15-11-25	"
Week 19	
17-11-25	Revision
18-11-25	"

TIKA RAM GIRLS COLLEGE SONIPAT

Lesson Plan Format

Name of Assistant/Associate Professor

Mrs. Priya

Class and Section

M.Sc. (F) IIIrd Sem Maths

Subject

Fluid Dynamics

Week 1	Description
15-07-25	
16-07-25	
17-07-25	
18-07-25	
19-07-25	
Week 2	
21-07-25	
22-07-25	
23-07-25	
24-07-25	
25-07-25	
26-07-25	
Week 3	
28-07-25	
29-07-25	
30-07-25	
01-08-25	
02-08-25	
Week 4	
04-08-25	
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08-08-25	
Week 5	
11-08-25	
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13-08-25	

14-08-25	
Week 6	
18-08-25	
19-08-25	
20-08-25	
21-08-25	
22-08-25	
23-08-25	Introduction of fluid Dynamics
Week 7	
25-08-25	Velocity at a point of a fluid Eulerian Method with eq. Lagrangian methods.
26-08-25	
27-08-25	
28-08-25	
29-08-25	
30-08-25	
Week 8	
01-09-25	Stream lines, & Path lines with eq. Discuss about streak lines. Velocity potential & Irrotational Motion.
02-09-25	
03-09-25	
04-09-25	
06-09-25	
Week 9	
08-09-25	Introduction of Rotational Motion, Vorticity Circulation & Eq ⁿ of Continuity. Introduction of Boundary Surfaces
09-09-25	
10-09-25	
11-09-25	
12-09-25	
13-09-25	
Week 10	
15-09-25	Some eq. of Boundary Surfaces Acceleration at a point of a fluid Components in cylindrical & spherical
16-09-25	
17-09-25	
18-09-25	
19-09-25	
20-09-25	

Week 11	
24-09-25	Pressure at a point of moving fluid Euler eq ⁿ of motion in Cylindrical
25-09-25	
26-09-25	
27-09-25	
Week 12	
29-09-25	Eq ⁿ of Motion in Spherical polar Co-ordinates Bernoulli eq ⁿ thm. Kelvin Circulation thm & Impulsive Motion.
30-09-25	
01-10-25	
03-10-25	
04-10-25	
Week 13	
06-10-25	Kinetic energy of irrotational flow; Vorticity eq ⁿ , Kelvin minimum energy thm Uniqueness thm, Kinetic energy of infinite fluid
08-10-25	
09-10-25	
10-10-25	
11-10-25	
Week 14	
13-10-25	Axially Symmetric flows
Week 15	
23-10-25	
24-10-25	
25-10-25	
Week 16	
27-10-25	Liquid streaming past a fixed sphere. Motion of a sphere through a liquid Eq ⁿ of motion of a sphere
28-10-25	
29-10-25	
30-10-25	
31-10-25	
01-11-25	
Week 17	
03-11-25	Motion of two Concentric spheres Kinetic energy generated by impulsive Motion
04-11-25	

06-11-25	3-D Sources, Sinks & doublets
07-11-25	
08-11-25	
Week 18	
10-11-25	2-D Motion of Cylindrical polar Co-ordinates Stream ψ , Stoke Stream ψ .
11-11-25	
12-11-25	Irrotational motion in 2-D, Complex Velocity
13-11-25	
14-11-25	
15-11-25	
Week 19	
17-11-25	Milne-Thomson η , Blasius η
18-11-25	2-D Sources, Sinks & doublets & their Images

TIKA RAM GIRLS COLLEGE SONIPAT

Lesson Plan Format

Name of Assistant/Associate Professor

Mrs. Priya

Class and Section

M.Sc. (F) IIIrd Sem Maths

Subject

Mathematical Modeling

Week 1	Description
15-07-25	
16-07-25	
17-07-25	
18-07-25	
19-07-25	
Week 2	
21-07-25	
22-07-25	
23-07-25	
24-07-25	
25-07-25	
26-07-25	
Week 3	
28-07-25	
29-07-25	
30-07-25	
01-08-25	
02-08-25	
Week 4	
04-08-25	
05-08-25	
06-08-25	
07-08-25	
08-08-25	
Week 5	
11-08-25	
12-08-25	
13-08-25	

14-08-25	
Week 6	
18-08-25	
19-08-25	
20-08-25	
21-08-25	
22-08-25	
23-08-25	Introduction of Mathematical Modeling
Week 7	
25-08-25	Classification & characteristics of M.M.
26-08-25	M.M. through algebra, Radius of earth
27-08-25	Motion of planets & satellites
28-08-25	
29-08-25	
30-08-25	
Week 8	
01-09-25	Linear & non-linear decay model, Population growth model
02-09-25	Effects of immigration & emigration, Decrease in
03-09-25	Diffusion, Change of price of a Commodity
04-09-25	
06-09-25	
Week 9	
08-09-25	Logistic law of population, Diffusion of glucose
09-09-25	Medicine in the blood stream.
10-09-25	test
11-09-25	
12-09-25	
13-09-25	
Week 10	
15-09-25	Mathematical Modelling of epidemics, A simple
16-09-25	SIS Model with constant no. of Carriers
17-09-25	Model with removal & immigration
18-09-25	
19-09-25	
20-09-25	

Week 11	
24-09-25	Domas macro model, 1 st , 2 nd debt model
25-09-25	
26-09-25	
27-09-25	
Week 12	
29-09-25	Samuelson Investment Model, Stability of ^{market} equilibrium Mathematical Modelling in medicine Arms race & battles, A Model of diabetes Mellitus
30-09-25	
01-10-25	
03-10-25	
04-10-25	
Week 13	
06-10-25	Richardson Model for arms race - Test Lanchester Combat Model
08-10-25	
09-10-25	
10-10-25	
11-10-25	
Week 14	
13-10-25	Mathematical Modelling through PDE - eq ⁿ
Week 15	
23-10-25	Mass-balance Eq ⁿ , Momentum-balance eq ⁿ
24-10-25	
25-10-25	
Week 16	
27-10-25	Variational principles, eq. - Test probability generating function; Model on Highway.
28-10-25	
29-10-25	
30-10-25	
31-10-25	
01-11-25	
Week 17	
01-11-25	Stochastic Model of population growth, Stochastic Model, LB-D-I-E Process.
02-11-25	

06-11-25	
07-11-25	
08-11-25	
Week 18	
10-11-25	LB-D-E-process
11-11-25	Non-Linear Birth-death process
12-11-25	Revision
13-11-25	
14-11-25	
15-11-25	
Week 19	
17-11-25	Test
18-11-25	Revision

TIKA RAM GIRLS COLLEGE SONIPAT

Lesson Plan Format

Name of Assistant/Associate Professor

Class and Section

Subject

Mrs. Pooja
M.Sc - Final yr. ^{III} Sem. (Mathematics)
Elementary Topology.

Week 1	Description
15-07-25	
16-07-25	
17-07-25	
18-07-25	
19-07-25	
Week 2	
21-07-25	
22-07-25	
23-07-25	
24-07-25	
25-07-25	
26-07-25	
Week 3	
28-07-25	
29-07-25	
30-07-25	
01-08-25	
02-08-25	
Week 4	
04-08-25	
05-08-25	
06-08-25	
07-08-25	
08-08-25	
Week 5	
11-08-25	
12-08-25	
13-08-25	

14-08-25	
Week 6	
18-08-25	
19-08-25	
20-08-25	Definition and examples of topology spaces. Comparison of topology on a set Intersection and union of topologies on a set
21-08-25	
22-08-25	
23-08-25	
Week 7	
25-08-25	
26-08-25	
27-08-25	Neighbourhoods, interior point and interior of a set closed set and open set Adherent point and limit point set
28-08-25	
29-08-25	
30-08-25	
Week 8	
01-09-25	
02-09-25	
03-09-25	closure set, Derived set Properties of closure operator
04-09-25	
06-09-25	
Week 9	
08-09-25	
09-09-25	
10-09-25	Interior, Exterior and boundary operators Kuratowski closure operator.
11-09-25	
12-09-25	
13-09-25	
Week 10	
15-09-25	
16-09-25	
17-09-25	Relative topology Base and subbase for a topology Base for Neighbourhood system
18-09-25	
19-09-25	
20-09-25	

Week 11	
24-09-25	
25-09-25	Continuous function, open and closed fun Homeomorphism, connectedness and characterization continuity and connectedness, components
26-09-25	
27-09-25	
Week 12	
29-09-25	
30-09-25	Locally connected spaces. compact space and subsets compactness theorem of finite intersection property
01-10-25	
03-10-25	
04-10-25	
Week 13	
06-10-25	
08-10-25	Continuity and compact sets closeness of compact subset and continuous map Hausdorff space.
09-10-25	
10-10-25	
11-10-25	
Week 14	
13-10-25	
Week 15	
23-10-25	Sequentially and countably compact sets.
24-10-25	
25-10-25	
Week 16	
27-10-25	
28-10-25	
29-10-25	First countable Second, and separable space.
30-10-25	
31-10-25	
01-11-25	
Week 17	
03-11-25	
04-11-25	

06-11-25	Hereditary and topological property Countability of a collection of disjoint sets
07-11-25	
08-11-25	
Week 18	
10-11-25	
11-11-25	
12-11-25	Separable and second countable space Lindelof theorem T_0, T_1, T_2 separation axioms.
13-11-25	
14-11-25	
15-11-25	
Week 19	
17-11-25	
18-11-25	

TIKA RAM GIRLS COLLEGE SONIPAT

Lesson Plan Format

Name of Assistant/Associate Professor

Mrs. PooJA

Class and Section

M.Sc. (Final yr.) ^{IIIrd sem} Mathematics

Subject

Ordinary Differential Equation

Week 1	Description
15-07-25	
16-07-25	
17-07-25	
18-07-25	
19-07-25	
Week 2	
21-07-25	
22-07-25	
23-07-25	
24-07-25	
25-07-25	
26-07-25	
Week 3	
28-07-25	
29-07-25	
30-07-25	
01-08-25	
02-08-25	
Week 4	
04-08-25	
05-08-25	
06-08-25	
07-08-25	
08-08-25	
Week 5	
11-08-25	
12-08-25	
13-08-25	

14-08-25	
Week 6	
18-08-25	
19-08-25	
20-08-25	
21-08-25	Preliminaries ϵ -approximate solution Cauchy - Euler construction of " " Equicontinuous family of function.
22-08-25	
23-08-25	
Week 7	
25-08-25	
26-08-25	
27-08-25	
28-08-25	Ascoli - Arzela lemma Cauchy - Peano existence theorem. Lipschitz condition
29-08-25	
30-08-25	
Week 8	
01-09-25	
02-09-25	
03-09-25	
04-09-25	Picards - Lindelof existence solution of initial value problem.
06-09-25	
Week 9	
08-09-25	
09-09-25	
10-09-25	
11-09-25	Test Dependence of solution on initial condition "
12-09-25	
13-09-25	
Week 10	
15-09-25	
16-09-25	
17-09-25	
18-09-25	Linear systems Matrix method for homogeneous. First order system " "
19-09-25	
20-09-25	

Week 11	
24-09-25	
25-09-25	Fundamental set of Solution "Wronskian" of Solution
26-09-25	
27-09-25	
Week 12	
29-09-25	
30-09-25	
01-10-25	
03-10-25	Basic Theory of the homogeneous linear system Abel-Liouville formula
04-10-25	
Week 13	
06-10-25	
08-10-25	
09-10-25	Sturm Theory Nonlinear differential systems, Phase plane, Path, Critical points.
10-10-25	
11-10-25	
Week 14	
13-10-25	
Week 15	
23-10-25	Types of critical points Asymptotically stable points. Almost linear system.
24-10-25	
25-10-25	
Week 16	
27-10-25	
28-10-25	
29-10-25	
30-10-25	Nonlinear conservative dynamical system Dependence on a parameter Liapunov direct method
31-10-25	
01-11-25	
Week 17	
03-11-25	
04-11-25	

06-11-25	Limit cycles
07-11-25	Periodic solution
08-11-25	Bendixson nonexistence criterion
Week 18	
10-11-25	
11-11-25	
12-11-25	
13-11-25	Poincaré - Bendixson theorem
14-11-25	Index of critical point
15-11-25	Orthogonality of characteristic function.
Week 19	
17-11-25	
18-11-25	