

## TIKA RAM GIRLS COLLEGE SONEPAT

## Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR Dr. SONIA  
 CLASS AND SECTION Misc (F) Maths  
 SUBJECT Inner product spaces

WEEK 1	DESCRIPTION
1.01.24	Introduction : N.L.S
2.01.24	Normed linear spaces
3.01.24	"
4.01.24	"
5.01.24	Metric on N.L.S
6.01.24	"
<b>WEEK 2</b>	
8.01.24	Completion of a normed space
9.01.24	"
10.01.24	"
11.01.24	Banach spaces
12.01.24	"
13.01.24	Subspace of a Banach space
<b>WEEK 3</b>	
15.01.24	Theorem Related to Banach space
16.01.24	"
18.01.24	"
19.01.24	Hilbert spaces : I.P.S
20.01.24	Schwarz inequality
<b>WEEK 4</b>	
22.01.24	Hilbert space as N.L.S
23.01.24	convex sets in Hilbert space
24.01.24	Projection theorem.
25.01.24	"
27.01.24	Orthonormal sets, Parseval identity.
<b>WEEK 5</b>	
29.01.24	Conjugate of a Hilbert space
30.01.24	"
31.01.24	Adjoint of an operator of a Hilbert space
01.02.24	"
02.02.24	"
03.02.24	Reflexivity of Hilbert space.

WEEK 6	DESCRIPTION
05.02.24	
06.02.24	Hilbert Space Theorem
07.02.24	"
08.02.24	Operators - Introduction
09.02.24	Positive Operator
10.02.24	"
	"
<b>WEEK 7</b>	
12.02.24	Product of positive operators
13.02.24	"
15.02.24	"
16.02.24	"
17.02.24	"
<b>WEEK 8</b>	
19.02.24	Discussion on operators
20.02.24	"
21.02.24	"
22.02.24	Test
23.02.24	Revision
24.02.24	"
<b>WEEK 9</b>	
26.02.24	Projection operators
27.02.24	"
28.02.24	"
29.02.24	Product of projections
01.03.24	"
02.03.24	Sum and difference of projections
<b>WEEK 10</b>	
04.03.24	Normal & unitary operators
05.03.24	"
06.03.24	"
07.03.24	Projections on Hilbert space
09.03.24	"
<b>WEEK 11</b>	
11.03.24	Theorem on projections
12.03.24	"
13.03.24	Spectral theorem on finite dimensional space
14.03.24	"
15.03.24	"
16.03.24	Convex functions
<b>WEEK 12</b>	
18.03.24	Jensen inequalities
19.03.24	Measure Space
20.03.24	"
21.03.24	Extension of measure
22.03.24	Carathéodory extension theorem

WEEK 13	
	DESCRIPTION
	----- HOLI BREAK-----
<b>WEEK 14</b>	
01.04.24	Signed measure
02.04.24	"
03.04.24	"
04.04.24	Hahn decomposition Theorem
05.04.24	Jordan decomposition Theorem
06.04.24	Mutually signed measure
<b>WEEK 15</b>	
08.04.24	"
09.04.24	Radon Nikodym Theorem
10.04.24	"
12.04.24	Lebesgue decomposition
13.04.24	Lebesgue Stieltjes integral
<b>WEEK 16</b>	
15.04.24	Product measure
16.04.24	"
18.04.24	Fubini Theorem
19.04.24	"
20.04.24	"
<b>WEEK 17</b>	
22.04.24	Baire sets
23.04.24	Baire measure
24.04.24	continuous functions with compact support
25.04.24	"
26.04.24	"
27.04.24	Revision

2nd.

# TIKA RAM GIRLS COLLEGE SONEPAT

## Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR PooJA

CLASS AND SECTION M.Sc (E) IV<sup>th</sup> Sem

SUBJECT classical mechanics

WEEK 1	DESCRIPTION
1.01.24	Introduction of moment and product of inertia Angular momentum of rigid body Principal axes
2.01.24	
3.01.24	
4.01.24	
5.01.24	
6.01.24	
<b>WEEK 2</b>	
8.01.24	Principal moment of inertia Kinetic energy of rigid body
9.01.24	
10.01.24	
11.01.24	
12.01.24	
13.01.24	
<b>WEEK 3</b>	
15.01.24	Momental ellipsoid equimomental system
16.01.24	
18.01.24	
19.01.24	
20.01.24	
<b>WEEK 4</b>	
22.01.24	Coplanar mass distributions General motion of a rigid body
23.01.24	
24.01.24	
25.01.24	
27.01.24	
<b>WEEK 5</b>	
29.01.24	Free and constrained system Constraints and their classification Monohomonic and non holonomic system
30.01.24	
31.01.24	
01.02.24	
02.02.24	
03.02.24	

WEEK 6	DESCRIPTION
05.02.24	Degree of freedom generalized coordinates
06.02.24	
07.02.24	
08.02.24	
09.02.24	
10.02.24	virtual displacement
WEEK 7	
12.02.24	Principle of virtual work
13.02.24	
15.02.24	
16.02.24	General equation of dynamics
17.02.24	
WEEK 8	
19.02.24	Lagrange equation of first kind & D'Alembert principle
20.02.24	
21.02.24	
22.02.24	
23.02.24	
24.02.24	generalized momenta $p_i$
WEEK 9	
26.02.24	Hamiltonian variable
27.02.24	
28.02.24	Donkin Theorem
29.02.24	
01.03.24	"
02.03.24	"
WEEK 10	
04.03.24	Ignorable coordinates
05.03.24	
06.03.24	
07.03.24	
09.03.24	Mi-milton canonical equation define Routh
WEEK 11	
11.03.24	Routh equation
12.03.24	
13.03.24	
14.03.24	
15.03.24	
16.03.24	
WEEK 12	
18.03.24	Hamiltonian action
19.03.24	
20.03.24	Whittaker equation
21.03.24	
22.03.24	
22.03.24	

WEEK 13	DESCRIPTION
	----- HOLI BREAK -----
<b>WEEK 14</b>	
01.04.24	Introduction of canonical transformation
02.04.24	
03.04.24	Necessary and sufficient condition "
04.04.24	
05.04.24	Univalent canonical transformation
06.04.24	"
<b>WEEK 15</b>	
08.04.24	For $\rho$ Jacobi "
09.04.24	theorem
10.04.24	
12.04.24	
13.04.24	Method of separation of variables in HJ
<b>WEEK 16</b>	
15.04.24	Lagrange "
16.04.24	brackets
18.04.24	NDs condition
19.04.24	"
20.04.24	
<b>WEEK 17</b>	
22.04.24	Jacobian matrix of "
23.04.24	
24.04.24	Poisson " brackets
25.04.24	" " brackets under canonical transf.
26.04.24	"
27.04.24	"

Jan - 2024.

3rd.

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR ✓ Dr. Suman Kumari  
CLASS AND SECTION M.Sc (F) Maths  
SUBJECT (Maths) Paper - Viscous fluid Dynamics

WEEK 1	DESCRIPTION
1.01.24	Introduction to vorticity in two dimensions.
2.01.24	Circular and rectilinear vortices and vortex doublet.
3.01.24	Introduction <sup>motion</sup> due to vortices. Single and double infinitesimals.
4.01.24	Karman vortex street and wave motion in gas.
5.01.24	Speed of sound in a gas and Equation of motion of gas.
6.01.24	— do —
WEEK 2	
8.01.24	— do —
9.01.24	Introduction to subsonic, sonic and supersonic flows.
10.01.24	— do —
11.01.24	Introduction to Isentropic gas flow,
12.01.24	— do —
13.01.24	Flow through a nozzle.
WEEK 3	
15.01.24	— do —
16.01.24	Introduction to stress components in a real fluid.
18.01.24	Relation b/w cartesian components of stress.
19.01.24	— do —
20.01.24	Translational motion of fluid element.
WEEK 4	
22.01.24	— do —
23.01.24	Rates of strain and Transformation of rates of strains.
24.01.24	— do —
25.01.24	Relation b/w stresses and rates of strain.
27.01.24	— do —
WEEK 5	
29.01.24	The coefficient of viscosity and laminar flow.
30.01.24	— do —
31.01.24	Newtonian and non-Newtonian fluids.
01.02.24	— do —
02.02.24	— do —
03.02.24	Navier-Stoke equation of motion.

WEEK 6	
	DESCRIPTION
05.02.24	— do —
06.02.24	Equation of motion in cylindrical and spherical polar coordinates
07.02.24	— do —
08.02.24	Diffusion of vorticity.
09.02.24	Energy dissipation due to viscosity.
10.02.24	— do —
WEEK 7	
12.02.24	Plane Poiseuille and Couette flows b/w two parallel plates.
13.02.24	— do —
15.02.24	Theory of lubrication.
16.02.24	<del>Hagen</del> Hagen Poiseuille flow.
17.02.24	Steady flow b/w co-axial circular cylinders and
WEEK 8	
19.02.24	Steady flow b/w concentric rotating cylinders.
20.02.24	— do —
21.02.24	Flow through tubes of uniform elliptic cross-section.
22.02.24	Flow through tubes of uniform equilateral triangular cross-section.
23.02.24	— do —
24.02.24	— do —
WEEK 9	
26.02.24	Unsteady flow over a flat plate.
27.02.24	— do —
28.02.24	Steady flow past a fixed sphere.
29.02.24	— do —
01.03.24	Flow in convergent and divergent channels.
02.03.24	— do —
WEEK 10	
04.03.24	Dynamical Similarities
05.03.24	— do —
06.03.24	Non-dimensional numbers.
07.03.24	— do —
09.03.24	Dimensional analysis.
WEEK 11	
11.03.24	— do —
12.03.24	Buckingham $\pi$ -theorem and its application
13.03.24	— do —
14.03.24	— do —
15.03.24	Physical importance of non-dimensional parameters.
16.03.24	— do —
WEEK 12	
18.03.24	Prandtl boundary layer. Boundary layer eq <sup>n</sup> in 2D.
19.03.24	— do —
20.03.24	The boundary layer on a flat plate (Blasius solution)
21.03.24	— do —
22.03.24	— do —



**WEEK 13****DESCRIPTION**

----- HOLI BREAK-----

**WEEK 14**

01.04.24

do

02.04.24

Characteristic boundary layer parameters.

03.04.24

do

04.04.24

Kernan Integral conditions.

05.04.24

do

06.04.24

do**WEEK 15**

08.04.24

Kernan-Pohlhausen method.

09.04.24

do

10.04.24

do

12.04.24

Buckingham  $\pi$ -Theorem and its application.

13.04.24

do**WEEK 16**

15.04.24

Revision.

16.04.24

do

18.04.24

do

19.04.24

Test.

20.04.24

Revision.

**WEEK 17**

22.04.24

Revision.

23.04.24

do

24.04.24

do

25.04.24

do

26.04.24

do

27.04.24

do

## TIKA RAM GIRLS COLLEGE SONEPAT

## Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR Dr. Sonia

CLASS AND SECTION M.Sc.(E) maths.

SUBJECT Graph Theory

WEEK 1	DESCRIPTION
1.01.24	Definition and types of graphs
2.01.24	Types of graphs
3.01.24	"
4.01.24	Walks, paths and circuits
5.01.24	"
6.01.24	"
<b>WEEK 2</b>	
8.01.24	Connected and disconnected graphs
9.01.24	"
10.01.24	"
11.01.24	Applications of graphs.
12.01.24	"
13.01.24	operations on graphs.
<b>WEEK 3</b>	
15.01.24	Graph representation
16.01.24	"
18.01.24	"
19.01.24	Isomorphism of graphs
20.01.24	"
<b>WEEK 4</b>	
22.01.24	"
23.01.24	Revision of problems
24.01.24	"
25.01.24	"
27.01.24	"
<b>WEEK 5</b>	
29.01.24	Eulerian and Hamiltonian path Introduction
30.01.24	"
31.01.24	Shortest path in a Weighted Graph
01.02.24	"
02.02.24	"
03.02.24	"

WEEK 6	DESCRIPTION
05.02.24	
06.02.24	The travelling Salesperson Problem
07.02.24	"
08.02.24	"
09.02.24	Planar Graphs
10.02.24	"
	"
<b>WEEK 7</b>	
12.02.24	Detection of planarity and Kuratowski's Theo.
13.02.24	"
15.02.24	"
16.02.24	"
17.02.24	Graph colouring
<b>WEEK 8</b>	
19.02.24	Graph colouring
20.02.24	"
21.02.24	"
22.02.24	Revision
23.02.24	"
24.02.24	Test
<b>WEEK 9</b>	
26.02.24	Directed paths Graphs
27.02.24	Tree
28.02.24	"
29.02.24	"
01.03.24	"
02.03.24	Revision
<b>WEEK 10</b>	
04.03.24	Tree Terminology
05.03.24	"
06.03.24	"
07.03.24	Rooted Labeled Trees
09.03.24	"
<b>WEEK 11</b>	
11.03.24	Prefix Code
12.03.24	"
13.03.24	"
14.03.24	Revision
15.03.24	—
16.03.24	—
<b>WEEK 12</b>	
18.03.24	Binary Search Tree
19.03.24	"
20.03.24	"
21.03.24	Tree Traversal
22.03.24	"

WEEK 13	DESCRIPTION
	----- HOLI BREAK-----
<b>WEEK 14</b>	
01.04.24	Spanning Trees
02.04.24	
03.04.24	
04.04.24	
05.04.24	
06.04.24	
	Minimum Spanning Trees.
<b>WEEK 15</b>	
08.04.24	Kruskal Algorithm
09.04.24	
10.04.24	
12.04.24	
13.04.24	Prim Algorithm
<b>WEEK 16</b>	
15.04.24	Decision Trees
16.04.24	
18.04.24	
19.04.24	
20.04.24	Sorting Methods
<b>WEEK 17</b>	
22.04.24	Sorting Methods
23.04.24	
24.04.24	Revision
25.04.24	
26.04.24	
27.04.24	

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Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR ..... Mimansa .....  
 CLASS AND SECTION ..... M.Sc. Final (Maths) .....  
 SUBJECT ..... Algebraic No. Theory .....

WEEK 1	DESCRIPTION
1.01.24	Algebraic Int. and No.
2.01.24	"
3.01.24	Gaussian Int. & its Properties
4.01.24	"
5.01.24	Fundamental Theorem in ring of
6.01.24	Gaussian Integers
WEEK 2	
8.01.24	Int. & fundamental Theorem in $\mathbb{Q}(\omega)$
9.01.24	"
10.01.24	Algebraic fields
11.01.24	"
12.01.24	Primitive Polynomials
13.01.24	"
WEEK 3	
15.01.24	General quadratic field $\mathbb{Q}(\sqrt{m})$
16.01.24	"
18.01.24	Units of $\mathbb{Q}(\sqrt{2})$
19.01.24	"
20.01.24	field in which fund. Th. is false
WEEK 4	
22.01.24	Real & complex Euclidean fields
23.01.24	"
24.01.24	Fermat Theorem in ring of Gaussian Int.
25.01.24	"
27.01.24	Primes of $\mathbb{Q}(\sqrt{2})$ and $\mathbb{Q}(\sqrt{5})$
WEEK 5	
29.01.24	Countability of Set of Alg. No.
30.01.24	"
31.01.24	"
01.02.24	"
02.02.24	Liouville Theorem
03.02.24	Some questions on above Th.

WEEK 6	DESCRIPTION
05.02.24	Generalization of Liouville Th.
06.02.24	"
07.02.24	"
08.02.24	Transcendental No.
09.02.24	"
10.02.24	"
<b>WEEK 7</b>	
12.02.24	Algebraic No. fields
13.02.24	"
15.02.24	"
16.02.24	Liouville Th. of Primitive elements
17.02.24	"
<b>WEEK 8</b>	
19.02.24	Ring of Alg. integers
20.02.24	"
21.02.24	Theorem of Primitive elements
22.02.24	"
23.02.24	Some que. on above topic
24.02.24	"
<b>WEEK 9</b>	
26.02.24	Norm of an Alg. No.
27.02.24	"
28.02.24	Trace of an Algebraic No.
29.02.24	"
01.03.24	Non degeneracy of Bilinear pairing
02.03.24	"
<b>WEEK 10</b>	
04.03.24	Existence of an integral basis
05.03.24	"
06.03.24	"
07.03.24	Discriminant of Alg. No. field
09.03.24	"
<b>WEEK 11</b>	
11.03.24	Ideals in ring of Alg. Int.
12.03.24	"
13.03.24	"
14.03.24	Explicit construction of Integral basis
15.03.24	"
16.03.24	"
<b>WEEK 12</b>	
18.03.24	Sign of the discriminant
19.03.24	"
20.03.24	Cyclotomic fields
21.03.24	"
22.03.24	Calculation for quadratic & cubic cases

WEEK 13	DESCRIPTION
	----- HOLI BREAK-----
<b>WEEK 14</b>	
01.04.24	Integral Closure
02.04.24	"
03.04.24	Noetherian Ring
04.04.24	"
05.04.24	"
06.04.24	Characterizing Dedekind domains
<b>WEEK 15</b>	
08.04.24	Fractional ideals
09.04.24	Unique factorization
10.04.24	"
12.04.24	GCD and LCM of ideals
13.04.24	"
<b>WEEK 16</b>	
15.04.24	Chinese Remainder Theorem
16.04.24	Dedekind Theorem
18.04.24	Ramified & Unramified extensions
19.04.24	"
20.04.24	"
<b>WEEK 17</b>	
22.04.24	Different of an Alg. No. field
23.04.24	"
24.04.24	Some questions on above topic
25.04.24	"
26.04.24	Factorization in Ring of Alg. Int.
27.04.24	"

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR ..... Dr. SONIA .....

CLASS AND SECTION ..... M.S.(P) maths .....

SUBJECT ..... Theory of Field Extension .....

WEEK 1	DESCRIPTION
1.01.24	Introduction - Extension of fields
2.01.24	Simple Extensions
3.01.24	"
4.01.24	"
5.01.24	Theorem related to simple Extension
6.01.24	"
<b>WEEK 2</b>	
8.01.24	Algebraic and Transcendental Extensions
9.01.24	"
10.01.24	"
11.01.24	Theorem related to Extensions
12.01.24	"
13.01.24	Factorization of polynomials
<b>WEEK 3</b>	
15.01.24	Theorem factorization of polynomials
16.01.24	"
18.01.24	Splitting fields
19.01.24	"
20.01.24	"
<b>WEEK 4</b>	
22.01.24	Algebraically closed fields
23.01.24	"
24.01.24	"
25.01.24	"
27.01.24	Perfect Fields
<b>WEEK 5</b>	
29.01.24	Galois Theory : Automorphisms of fields
30.01.24	"
31.01.24	"
01.02.24	"
02.02.24	Theorem related to Automorphisms
03.02.24	"



EXAMINATION

Mathematical and other basic inductions

Some related exercises

Final Exams

Normal extensions

Test

Normal closure of an extension

Theorems related to Normal closure

Test

Discussion

WEEK 10

The fundamental theorems of Galois Theory

WEEK 11

Norms and traces

WEEK 12

Discussion

Test

Revision

WEEK 13		DESCRIPTION
		----- HOLI BREAK-----
WEEK 14		
01.04.24		Rules and compasses construction
02.04.24		"
03.04.24		"
04.04.24		"
05.04.24		Test
06.04.24		"
WEEK 15		
08.04.24		Solution by radicals
09.04.24		"
10.04.24		Extension by radicals
12.04.24		"
13.04.24		Gauss's polynomials
WEEK 16		
15.04.24		Algebraically Independent sets
16.04.24		"
18.04.24		"
19.04.24		Test
20.04.24		Insolvability of the general polynomial
WEEK 17		
22.04.24		Revision
23.04.24		"
24.04.24		"
25.04.24		"
26.04.24		Test
27.04.24		—

TIKA RAM GIRLS COLLEGE SONEPAT  
Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR Poo J.A  
CLASS AND SECTION M.Sc.(P) IIrd Sem  
SUBJECT Measure and Integration Theory

WEEK 1	DESCRIPTION
1.01.24	Introduction of set functions
2.01.24	"
3.01.24	Intuitive idea of measure
4.01.24	"
5.01.24	Elementary properties of measure
6.01.24	"
<b>WEEK 2</b>	
8.01.24	Measurable sets and their fundamental
9.01.24	" properties
10.01.24	"
11.01.24	"
12.01.24	Lebesgue measure of set of real
13.01.24	number
<b>WEEK 3</b>	
15.01.24	"
16.01.24	"
18.01.24	Algebra of measurable sets
19.01.24	"
20.01.24	"
<b>WEEK 4</b>	
22.01.24	Borel set
23.01.24	Equivalent formulation of measurable
24.01.24	set
25.01.24	Terms of open and closed
27.01.24	$F_\sigma$ and $G_\delta$ sets
<b>WEEK 5</b>	
29.01.24	Introduction of measurable function
30.01.24	"
31.01.24	"
01.02.24	Properties " "
02.02.24	" "
03.02.24	" "

WEEK 6	DESCRIPTION
05.02.24	Approximation of measurable function
06.02.24	"
07.02.24	"
08.02.24	Sequence of "simple functions
09.02.24	"
10.02.24	"
<b>WEEK 7</b>	
12.02.24	Measurable function as nearly continuous function
13.02.24	"
15.02.24	"
16.02.24	Egoroff " theorem
17.02.24	"
<b>WEEK 8</b>	
19.02.24	Lusin " theorem
20.02.24	"
21.02.24	Convergence in measure and F.
22.02.24	Riesz " theorem
23.02.24	"
24.02.24	Almost everywhere convergence.
<b>WEEK 9</b>	
26.02.24	Introduction of Riemann integral
27.02.24	"
28.02.24	Lebesgue integral of a bounded function
29.02.24	"
01.03.24	"
02.03.24	Set of finite measure
<b>WEEK 10</b>	
04.03.24	" Properties
05.03.24	"
06.03.24	Generalization of Riemann integral
07.03.24	"
09.03.24	"
<b>WEEK 11</b>	
11.03.24	Boundary convergence theorem
12.03.24	"
13.03.24	"
14.03.24	Points of "discontinuity of
15.03.24	"
16.03.24	Riemann integrable functions
<b>WEEK 12</b>	
18.03.24	Fatou Lemma
19.03.24	Monotone convergence theorem
20.03.24	"
21.03.24	"
22.03.24	Lebesgue convergence theorem

WEEK 13	DESCRIPTION
	----- HOLI BREAK-----
<b>WEEK 14</b>	
01.04.24	Vitalic covering lemma
02.04.24	
03.04.24	Differentiation of monotonic function
04.04.24	"
05.04.24	"
06.04.24	Function of bounded variation
<b>WEEK 15</b>	
08.04.24	
09.04.24	Difference of monotonic function
10.04.24	"
12.04.24	"
13.04.24	"
<b>WEEK 16</b>	
15.04.24	Differentiation of indefinite integral
16.04.24	"
18.04.24	"
19.04.24	"
20.04.24	Fundamental theorem of calculus
<b>WEEK 17</b>	
22.04.24	Absolutely continuous function
23.04.24	"
24.04.24	"
25.04.24	" Properties
26.04.24	"
27.04.24	"

## TIKA RAM GIRLS COLLEGE SONEPAT

## Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR

Mimansha

CLASS AND SECTION

M.Sc. (Pov.) (Maths.)

SUBJECT

Int. Eq. &amp; Calculus of Variation

WEEK 1	DESCRIPTION
1.01.24	Linear Integral Equation
2.01.24	"
3.01.24	Some basic identities
4.01.24	"
5.01.24	Initial Value problems of Volterra Int. Eq <sup>n</sup>
6.01.24	"
<b>WEEK 2</b>	
8.01.24	Method of Successive substitution
9.01.24	"
10.01.24	Succ. App. to solve Vol. Int. Eq <sup>n</sup> of 2nd kind
11.01.24	"
12.01.24	"
13.01.24	"
<b>WEEK 3</b>	
15.01.24	Iterated Kernels
16.01.24	"
18.01.24	Neumann Series for Volterra Eq <sup>n</sup>
19.01.24	"
20.01.24	Resolvent Kernel as a series
<b>WEEK 4</b>	
22.01.24	Laplace method for diff. of Kernel
23.01.24	"
24.01.24	"
25.01.24	Sol <sup>n</sup> of Vol. Int. Eq <sup>n</sup> of 1st kind
27.01.24	"
<b>WEEK 5</b>	
29.01.24	Bdry. value problems reduced to fr. Int. Eq <sup>n</sup> .
30.01.24	"
31.01.24	"
01.02.24	Method of Successive Approximation of solving fr. Eq <sup>n</sup> of 2nd kind
02.02.24	"
03.02.24	"

WEEK 6	DESCRIPTION
05.02.24	Iterad kernels
06.02.24	"
07.02.24	"
08.02.24	Neumann series for $f \circ E g^n$
09.02.24	"
10.02.24	"
<b>WEEK 7</b>	
12.02.24	Resolvent kernel as sum of kernels
13.02.24	"
15.02.24	$f \circ$ Res. kernel as ratio of 2 series
16.02.24	"
17.02.24	$f \circ$ Int. $E g^n$ with separable kernels
<b>WEEK 8</b>	
19.02.24	"
20.02.24	Approx. of kernel by separable kernel
21.02.24	"
22.02.24	Fredholm alternative
23.02.24	"
24.02.24	Non-Hom. $f \circ E g^n$ with degenerate kernel
<b>WEEK 9</b>	
26.02.24	Green $f u^n$
27.02.24	"
28.02.24	Method of var. of param. to construct
29.02.24	Green $f u^n$ for non-hom. linear 2nd
01.03.24	order Bdry value problems
02.03.24	"
<b>WEEK 10</b>	
04.03.24	Basic four prop. of Green $f u^n$
05.03.24	"
06.03.24	Alternate procedure for construction of
07.03.24	Green $f u^n$ by using basic 4 prop.
09.03.24	"
<b>WEEK 11</b>	
11.03.24	"
12.03.24	Reduction of Bdry value $f \circ$ to $f \circ$ Int.
13.03.24	$E g^n$ with kernel as Green $f u^n$
14.03.24	"
15.03.24	"
16.03.24	"
<b>WEEK 12</b>	
18.03.24	Bdry value problems
19.03.24	"
20.03.24	Hilbert Schmidt Theory for Sym. kernels
21.03.24	"
22.03.24	"

WEEK 13	DESCRIPTION
	----- HOLI BREAK-----
<b>WEEK 14</b>	
01.04.24	Problems of Calculus of Variation
02.04.24	"
03.04.24	"
04.04.24	Shortest distance for
05.04.24	"
06.04.24	Min. surface of revolution
<b>WEEK 15</b>	
08.04.24	"
09.04.24	Brachistochrone problem
10.04.24	"
12.04.24	Isoperimetric problems
13.04.24	"
<b>WEEK 16</b>	
15.04.24	Geodesic
16.04.24	Fundamental Lemma of Cal. of Var.
18.04.24	"
19.04.24	Euler Eq <sup>n</sup> for 1 dep. fu <sup>n</sup>
20.04.24	"
<b>WEEK 17</b>	
22.04.24	Generalization to 'n' dep. fu <sup>n</sup>
23.04.24	"
24.04.24	Higher order derivative fu <sup>n</sup>
25.04.24	"
26.04.24	Cond. Extremum under Geodesic Constraints
27.04.24	" " " Integral const.



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CLASS AND SECTION

M.Sc. (P) II<sup>nd</sup> Sem

SUBJECT

Partial Differential Equations

WEEK 1	DESCRIPTION
1.01.24	Introduction of Separation variables
2.01.24	B. V. P
3.01.24	"
4.01.24	one dimensional heat equation
5.01.24	"
6.01.24	"
<b>WEEK 2</b>	
8.01.24	Two " " " "
9.01.24	State temperature in a " rectangular plate
10.01.24	"
11.01.24	Circular disc
12.01.24	Semi-infinite plate
13.01.24	"
<b>WEEK 3</b>	
15.01.24	Problems solve
16.01.24	heat equation of semi-infinite
18.01.24	"
19.01.24	Solution of " three dimensional
20.01.24	Laplace equation
<b>WEEK 4</b>	
22.01.24	"
23.01.24	Heat equation
24.01.24	Cylindrical and spherical coordinates
25.01.24	Solution of wave equation
27.01.24	infinite string
<b>WEEK 5</b>	
29.01.24	Introduction of P. D. E
30.01.24	"
31.01.24	Examples of P. D. E
01.02.24	"
02.02.24	"
03.02.24	"

WEEK 6	DESCRIPTION
05.02.24	P. D. E. classification
06.02.24	"
07.02.24	"
08.02.24	Transport equation
09.02.24	"
10.02.24	initial value problems
<b>WEEK 7</b>	
12.02.24	"
13.02.24	Non-homogeneous equations
15.02.24	"
16.02.24	"
17.02.24	Laplace equation
<b>WEEK 8</b>	
19.02.24	Fundamental Solution
20.02.24	"
21.02.24	Mean value problems
22.02.24	"
23.02.24	Properties of harmonic function
24.02.24	"
<b>WEEK 9</b>	
26.02.24	Introduction of Heat equation
27.02.24	"
28.02.24	"
29.02.24	Fundamental Solution
01.03.24	"
02.03.24	Mean value formula
<b>WEEK 10</b>	
04.03.24	Properties of solutions
05.03.24	"
06.03.24	"
07.03.24	energy methods
09.03.24	"
<b>WEEK 11</b>	
11.03.24	Introduction of wave equation
12.03.24	"
13.03.24	Solution by spherical means
14.03.24	"
15.03.24	"
16.03.24	Non homogeneous equations
<b>WEEK 12</b>	
18.03.24	"
19.03.24	"
20.03.24	energy methods
21.03.24	"
22.03.24	"



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NAME OF ASSISTANT/ASSOCIATE PROFESSOR

Mimansa

CLASS AND SECTION

M.Sc. (Pov.) (Maths)

SUBJECT

Operation Research Techniques

WEEK 1	DESCRIPTION
1.01.24	OR : Origin and Definition
2.01.24	"
3.01.24	OR : Scope
4.01.24	"
5.01.24	"
6.01.24	"
<b>WEEK 2</b>	
8.01.24	Linear Prog. : Formulation
9.01.24	"
10.01.24	"
11.01.24	Linear Prog. : Sol <sup>n</sup> by Graphical method
12.01.24	"
13.01.24	"
<b>WEEK 3</b>	
15.01.24	Linear Prog. : Sol <sup>n</sup> of Simplex method
16.01.24	"
18.01.24	"
19.01.24	Big-M method
20.01.24	"
<b>WEEK 4</b>	
22.01.24	Two-phase method
23.01.24	"
24.01.24	Degeneracy
25.01.24	"
27.01.24	Duality in Linear Prog.
<b>WEEK 5</b>	
29.01.24	Transportation Problems
30.01.24	"
31.01.24	Basic feasible Sol <sup>n</sup>
01.02.24	"
02.02.24	Optimum Sol <sup>n</sup> of Stepping Stone method
03.02.24	"

WEEK 6		DESCRIPTION
05.02.24		Modified dist. method
06.02.24		"
07.02.24		"
08.02.24		Unbalanced & degenerate Problems
09.02.24		"
10.02.24		"
WEEK 7		
12.02.24		Transshipment Problems
13.02.24		"
15.02.24		"
16.02.24		Assignment Problems
17.02.24		"
WEEK 8		
19.02.24		Hungarian method
20.02.24		"
21.02.24		Case of "Maximization
22.02.24		"
23.02.24		Travelling Salesman Problem
24.02.24		"
WEEK 9		
26.02.24		Concept of Stochastic processes
27.02.24		"
28.02.24		"
29.02.24		Poisson process
01.03.24		"
02.03.24		"
WEEK 10		
04.03.24		Birth-Death process
05.03.24		"
06.03.24		"
07.03.24		Queuing models
09.03.24		"
WEEK 11		
11.03.24		Basic component of queuing system
12.03.24		"
13.03.24		"
14.03.24		Steady state sol <sup>n</sup> of Markovian model
15.03.24		"
16.03.24		Mark: model with single server
WEEK 12		
18.03.24		Mark: model by <del>the</del> multiple servers
19.03.24		M/M/I
20.03.24		M/M/C
21.03.24		M/M/1/k
22.03.24		M/M/C/k

WEEK 13	DESCRIPTION
	----- HOLI BREAK-----
<b>WEEK 14</b>	
01.04.24	Inventory control models
02.04.24	"
03.04.24	EOQ model with uniform demand
04.04.24	"
05.04.24	EOQ when shortages are allowed
06.04.24	"
<b>WEEK 15</b>	
08.04.24	"
09.04.24	EOQ with uniform replenishment
10.04.24	"
12.04.24	Inventory control with price breaks
13.04.24	"
<b>WEEK 16</b>	
15.04.24	Game Theory
16.04.24	"
18.04.24	Two person zero sum game
19.04.24	"
20.04.24	Game with saddle points
<b>WEEK 17</b>	
22.04.24	"
23.04.24	Rule of dominance
24.04.24	"
25.04.24	Alg., Gr., L.P. methods for solving games
26.04.24	"
27.04.24	"