



Aggarwal College Ballabgarh

LESSON PLAN 17 WEEKS (JAN-APRIL)-2025

Name of Faculty: Ms. Kanchan Malik

Designation/ Department: Assistant Prof. , Department of Mathematics

CLASS: M.Sc. Mathematics		SEMESTER: IV	SECTION: A
SUBJECT: INNER PRODUCT SPACE AND MEASURE THEORY			
Week			
1	7-1-2025	Introductory Class	
	8-1-2025	Inner product spaces	
	9-1-2025	Properties of Inner product spaces	
	10-1-2025	Properties of Inner product spaces	
	11-1-2025	Schwarz inequality	
	12-1-2025	S. U. N. D. A. Y.	
2	13-1-2025	Hilbert space as normed linear space	
	14-1-2025	Theorems related to Hilbert space as normed linear space	
	15-1-2025	More Theorems related to Hilbert space as normed linear space	
	16-1-2025	Convex sets in Hilbert spaces	
	17-1-2025	Theorems related to Convex sets in Hilbert spaces	
	18-1-2025	Orthogonal complements	
	19-1-2025	S. U. N. D. A. Y.	
3	20-1-2025	Theorems based on Orthogonal complements	
	21-1-2025	Pythagorean theorem with related examples	

	22-1-2025	Projection theorem
	23-1-2025	Questions related to projection theorem
	24-1-2025	Orthonormal set: definition and its examples
	25-1-2025	Theorems related to orthonormal set
	26-1-2025	REPUBLIC DAY /S. U. N. D. A. Y.
4	27-1-2025	Bessel inequality
	28-1-2025	Complete orthonormal set
	29-1-2025	Theorems based on Complete orthonormal set
	30-1-2025	Parseval's Equation
	31-1-2025	Questions related to parseval's equation
	1-2-2025	Gram-schmidt orthogonalization process
	2-2-2025	S. U. N. D. A. Y/BASANT PANCHAMI
5	3-2-2025	Conjugate of a Hilbert space
	4-2-2025	Theoems related to Conjugate of a Hilbert space
	5-2-2025	Reisz representation theorem in Hilbert spaces
	6-2-2025	Reisz representation theorem in Hilbert spaces
	7-2-2025	Adjoint of an operator on a Hilbert space
	8-2-2025	Theorems on Adjoint of an operator on a Hilbert space
	9-2-2025	S. U. N. D. A. Y
6	10-2-2025	More Theorems on Adjoint of an operator on a Hilbert space
	11-2-2025	Reflexivity of Hilbert space
	12-2-2025	HOLIDAY: GURU RAVIDAS JAYANTI
	13-2-2025	Questions based on Reflexivity of Hilbert space
	14-2-2025	Self-adjoint operators and its examples

	15-2-2025	Revision
	16-2-2025	S. U. N. D. A. Y.
7	17-2-2025	Theorems on Self-adjoint operators
	18-2-2025	More Theorems on Self-adjoint operators
	19-2-2025	Positive operators
	20-2-2025	Theorems on Positive operators
	21-2-2025	Product of Positive Operators.
	22-2-2025	Theorems on Product of Positive Operators.
	23-2-2025	S. U. N. D. A. Y.
8	24-2-2025	Theorems on Product of Positive Operators.
	25-2-2025	More Theorems on Product of Positive Operators.
	26-2-2025	HOLIDAY: MAHA SHIVRATRI
	27-2-2025	Projection operators and its examples
	28-2-2025	Theorems on Projection operators
	1-3-2025	More Theorems on Projection operators
	2-3-2025	S. U. N. D. A. Y.
9	3-3-2025	Product of Projections
	4-3-2025	Theorems on Product of Projections
	5-3-2025	Questions based on Sum and Difference of Projections
	6-3-2025	Normal operators
	7-3-2025	Theorems on Normal operators
	8-3-2025	Unitary Operator and its examples
	9-3-2025	S. U. N. D. A. Y.
10	10-3-2025	H.O.L.I-- B.R.E.A.K

	11-3-2025	H.O.L.I-- B.R.E.A.K
	12-3-2025	H.O.L.I-- B.R.E.A.K
	13-3-2025	H.O.L.I-- B.R.E.A.K
	14-3-2025	H.O.L.I-- B.R.E.A.K
	15-3-2025	H.O.L.I-- B.R.E.A.K
	16-03-2025	S. U. N. D. A. Y.
11	17-3-2025	Theorems on unitary operators
	18-3-2025	Projections on Hilbert space and its examples
	19-3-2025	Theorems based on Projections on Hilbert space
	20-3-2025	Spectral theorem on finite dimensional space
	21-3-2025	Spectral theorem on finite dimensional space
	22-3-2025	Doubts
	23-3-2025	S. U. N. D. A. Y.
12	24-3-2025	Convex functions and its examples
	25-3-2025	Jensen inequalities with related examples
	26-3-2025	Measure space
	27-3-2025	Theorems on Measure space
	28-3-2025	More Theorems on Measure space
	29-3-2025	Convex functions and its examples
	30-3-2025	S. U. N. D. A. Y.
13	31-3-2025	HOLIDAY: ID-UL-FITR
	1-4-2025	Generalized Fatou lemma
	2-4-2025	Measure and outer measure
	3-4-2025	Theorems based on Measure and outer measure

	4-4-2025	Extension of a measure
	5-4-2025	Caratheodory extension theorem
	6-4-2025	S. U. N. D. A. Y.
14	7-4-2025	Signed measure
	8-4-2025	Positive and Negative Measure
	9-4-2025	Examples on Positive and Negative Measure
	10-4-2025	HOLIDAY: MAHAVIR JAYANTI
	11-4-2025	Theorems related to Positive and Negative Measure
	12-4-2025	Doubts
	13-4-2025	S. U. N. D. A. Y.
15	14-4-2025	HOLIDAY: AMBEDKAR JAYANTI
	15-4-2025	Hahn decomposition theorem
	16-4-2025	Jordan decomposition theorem
	17-4-2025	Radon – Nikodyn theorem
	18-4-2025	Lebesgue decomposition
	19-4-2025	TEST
	20-4-2025	S. U. N. D. A. Y.
16	21-4-2025	Lebesgue-Stietjes Integral
	22-4-2025	Lebesgue-Stietjes Integral
	23-4-2025	Product measure
	24-4-2025	Theorems related to product measure
	25-4-2025	Fubini's theorem
	26-4-2025	Baier sets
	27-4-2025	S. U. N. D. A. Y.

17	28-4-2025	Baier measure
	29-4-2025	Continuous functions with compact support
	30-4-2025	HOLIDAY: AKSHAY TRITYA
	01-05-2025	Previous year question paper discussion
	02-05-2025	Previous year question paper discussion
	03-05-2025	Previous year question paper discussion
	04-05-2025	S. U. N. D. A. Y.

Signature