

GDC Memorial College

Bahal(Bhiwani)-127028

NAAC Accredited Grade "B" (Second Cycle) and Recognized under
the Sections 2(f) & 12B of the UGC Act, 1956

Affiliated to Ch. Bansi Lal University, Bhiwani

Lesson Plan- Jan to June 2026

Name - Jaiveer

Department - Mathematics

Class - M.Sc.

Subject - Functional analysis

Semester - 4th

Subject Code - 23MTH-N-401

Week-1

UNIT-1

27-Jan-26	Normed space
28-Jan-26	example of normed space
29-Jan-26	Banach space
31-Jan-26	Finite dimensional normed space and subspace

Week-2

2-Feb-26	linear operator
3-Feb-26	bounded and continuous linear operator
4-Feb-26	do
6-Feb-26	linear functional

Week-3

9-Feb-26	normed space of operator
10-Feb-26	Dual space
11-Feb-26	do
13-Feb-26	do

Week-4

UNIT-2

16-Feb-26	Inner product space
17-Feb-26	properties of Hilbert space
18-Feb-26	do
20-Feb-26	Orthogonal complement and direct sum

Week-5

23-Feb-26	do
24-Feb-26	Legendre Hermite and Lagurre polynomial
25-Feb-26	Representation theorem
27-Feb-26	Hilbert Adjoint operator

Week-6

2-Mar-26	self adjoint
3-Mar-26	unitary and normal operator
4-Mar-26	do

UNIT-3

6-Mar-26	Hahn Banach theorem
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Week-7

9-Mar-26	do
10-Mar-26	do
11-Mar-26	uniform bounded principle

Week-8

13-Mar-26	do
16-Mar-26	do
17-Mar-26	Closed graph theorem
18-Mar-26	do

Week-9

20-Mar-26	Open mapping theorem
23-Mar-26	do
24-Mar-26	Adjoint operator
25-Mar-26	Reflexivity

Week-10

27-Mar-26	do
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UNIT-4	
30-Mar-26	Spectral theory in finite dimensional normed space
31-Mar-26	do
3-Apr-26	spectral properties of bounded linear operator
Week-11	
4-Apr-26	do
5-Apr-26	do
7-Apr-26	do
10-Apr-26	properties of resolvent and spectrum
Week-12	
11-Apr-26	do
12-Apr-26	do
14-Apr-26	spectral properties of bounded self adjoint linear operator
17-Apr-26	do
Week-13	
18-Apr-26	do
19-Apr-26	postive operator
21-Apr-26	do
24-Apr-26	Rivision
Week-14	
25-Apr-26	Rivision
26-Apr-26	Rivision
29-Apr-26	Rivision

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Lesson Plan- January to April 2026

Name - Dr. Satya Narayan

Department - Mathematics

Class - M.Sc

Subject - Integral Equation

Semester - 4th

Subject Code - 23MTH-N-402

Week-1	UNIT-1
27-Jan-26	Linear integral equation some basic identities
28-Jan-26	Initial value problem reduce to voltera integral equation
29-Jan-26	do
Week-2	
02-Feb-26	Method of successive approximation to solve voltera integral equation.
03-Feb-26	do
04-Feb-26	Iterated kernal
05-Feb-26	do
Week-3	
09-Feb-26	Neumann series for voltera equation
10-Feb-26	do
11-Feb-26	do
12-Feb-26	do
Week-4	
16-Feb-26	Resolvent kernel as a series
17-Feb-26	do
18-Feb-26	Solution of voltera integral equation of first kind
19-Feb-26	do
UNIT-2	
Week-5	
23-Feb-26	Boundary value problem reduced to fredolm integral equation
24-Feb-26	do
25-Feb-26	Method of successive approximation to solve fredhlm integral equation
26-Feb-26	do
Week-6	
02-Mar-26	iterated kernel and neumann series for fredhlm integral equation
03-Mar-26	resolvent kernel as a sum of series
05-Mar-26	do
Week-7	
09-Mar-26	fredhlm integral equation with seprable kernel
10-Mar-26	do
11-Mar-26	non homogeneous fredhlm integral equation with degenrate kernal
12-Mar-26	do

UNIT-3	
Week-8	
16-Mar-26	Green Function Method of function of variation to construct of Green Function
17-Mar-26	do
18-Mar-26	do
19-Mar-26	do
Week-9	
23-Mar-26	Properties of green function
24-Mar-26	do
25-Mar-26	do
26-Mar-26	do
Week-10	
30-Mar-26	procedure of construction of green function by using four properties
31-Mar-26	do
01-Apr-26	reduction of boundary value problem to a freedhlon integral equation with kernel as a green function
02-Apr-26	do
Week-11	
06-Apr-26	Hilbert -Schmidt theory of symmetric kernels
07-Apr-26	do
08-Apr-26	do
09-Apr-26	do
UNIT-4	
Week-12	
13-Apr-26	integral transforms for solving integral equation
14-Apr-26	do
15-Apr-26	solution of abels equation using laplace transforms
16-Apr-26	do
Week-13	
20-Apr-26	application of laplace transforms
21-Apr-26	do
22-Apr-26	voltera integral equation with convolution type kernal
23-Apr-26	do
Week-14	
27-Apr-26	solution of integro-differential equation using laplace transforms
28-Apr-26	do
29-Apr-26	Fourier transforms sine and cisine transforms
30-Apr-26	do

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Lesson Plan- January to April 2026	
Name - Dr. Satya Narayan	Department - Mathematics
Class - M.Sc	Subject - M solid-II
Semester - 4th	Subject Code - 23MTH-N-403
	UNIT-1
Week-1	
27-Jan-26	plane strain and plane stress
28-Jan-26	do
30-Jan-26	do
Week-2	
02-Feb-26	Generalized plane stress
03-Feb-26	do
04-Feb-26	Airy stress function for plane
06-Feb-26	do
Week-3	
09-Feb-26	General solution of Biharmonic equation
10-Feb-26	do
11-Feb-26	Stresses and displacement in terms of complex potential
13-Feb-26	do
Week-4	
16-Feb-26	Thickwalled tube under external and internal pressure
17-Feb-26	do
18-Feb-26	Rotating shaft
20-Feb-26	do
	Unit-2
Week-5	
23-Feb-26	Torsion of cylindrical bars
24-Feb-26	Torsional rigidity
25-Feb-26	Torsion and stress function
27-Feb-26	Simple problem related to circle
Week-6	
02-Mar-26	Ellipse and equaliteral triangle cross section
03-Mar-26	Reciprocal theorem of betti and Rayleigh
06-Mar-26	Deflection of central line of beam
Week-7	
09-Mar-26	The ritz method one and two dimensional

10-Mar-26	The galerkin method
11-Mar-26	The method of Kantr4ovitch
13-Mar-26	do
Unit-3	
Week-8	
16-Mar-26	Spring and Dashpot
17-Mar-26	do
18-Mar-26	do
20-Mar-26	do
Week-9	
23-Mar-26	Maxwell and Kelvinb models
24-Mar-26	do
25-Mar-26	Three parameter solid
27-Mar-26	do
Week-10	
30-Mar-26	Its application to the deformation of a viscoelastic
31-Mar-26	do
01-Apr-26	do
03-Apr-26	do
Week-11	
06-Apr-26	Thick walled tube in Plane strain
07-Apr-26	do
08-Apr-26	do
10-Apr-26	do
Unit-4	
Week-12	
13-Apr-26	Simple Harmonis progressive waves
14-Apr-26	do
15-Apr-26	Scalar wave equation
17-Apr-26	Plane waves and spherical wave
Week-13	
20-Apr-26	Stationary type solution in cartesian and cylindrical coordinates
21-Apr-26	do
22-Apr-26	Propagation of waves in an unbounded isotropic elastic solid
24-Apr-26	do
Week-14	
27-Apr-26	P.SV and SH waves
28-Apr-26	do
29-Apr-26	Surface wave
30-Apr-26	Frequency equation for Rayleigh and Love waves

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Lesson Plan- January to April 2026

Name - Mr.. Prem singh Department - Mathematics

Class - M.Sc. Subject - Mathematical Aspects of seismology.

Semester-4th Subject Code - 23MTH-N-405

UNIT-1

15-Jan-26	wave general form of progressive wave
16-Jan-26	harmonic wave, plane wave
17-Jan-26	the wave equation , principle of superposition
19-Jan-26	progressive type solution of wave equation
22-Jan-26	stationary type of solution of wave equation in cartesian , spherical and cylindrical coordinate system
23-Jan-26	equation of telegraphy
24-Jan-26	exponential form of harmonic wave
26-Jan-26	D alembert formula
29-Jan-26	do
30-Jan-26	inhomogeneous wave equation
31-Jan-26	Dispersion
2-Feb-26	do
5-Feb-26	Dispersion
6-Feb-26	do
7-Feb-26	group velocity
9-Feb-26	do
11-Feb-26	do
12-Feb-26	relation between velocity and group velocity
14-Feb-26	do
16-Feb-26	do
19-Feb-26	Class Test

UNIT-2

24-Feb-26	spherical wave
25-Feb-26	expansion of spherical wave into plane wave
27-Feb-26	sommerfield integral
28-Feb-26	poission integral
5-Mar-26	helmholtz formula
6-Mar-26	introduction to seismology
7-Mar-26	Earthquakes, location of earthquakes, cause of earthquake and its observation
8-Mar-26	do
12-Mar-26	aftershocks and forshokes, earthquake magnitude, seismic moment energy, interior structure of earth

17-Mar-26	do
	UNIT-3
19-Mar-26	reduction of equation of motion to wave equation P and S wave and their characteristics
22-Mar-26	polarization of plane P and S wave
24-Mar-26	Snell law
25-Mar-26	reflection of plane P and SV wave at a free surface
26-Mar-26	Partition of reflected energy
31-Mar-26	reflection at critical angle
1-Apr-26	do
2-Apr-26	reflection and refraction of plane P, SV, and SH wave at solid interface
3-Apr-26	surface wave
8-Apr-26	rayleigh wave
9-Apr-26	love wave
10-Apr-26	stoneley wave
	UNIT-4
11-Apr-26	Two Dimensional lamb problems in isotropic elastic solid
12-Apr-26	Area source and line source in an unlimited elastic solid
14-Apr-26	A normal force act on the surface of a semi infinite elastic solid
15-Apr-26	do
22-Apr-26	tangential forces act on the surface of a semi elastic solid
23-Apr-26	do
24-Apr-26	do
25-Apr-26	three dimension lamb equation
28-Apr-26	isotropic elastic solid
29-Apr-26	area or volume source and point source in an unlimited elastic solid
30-Apr-26	do

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Lesson Plan- January to April 2026

Name - Dr. Satya Narayan		Department - Mathematics	
Class -M.Sc.		Subject - Advanced Fluid Dynamics	
Semester -4th		Subject Code - 23MTH-N-404	
Week-1		UNIT-1	
27-Jan-26	Rotational motion in two-dimensions		
28-Jan-26	do		
29-Jan-26	do		
Week-2			
02-Feb-26	Complex potential		
03-Feb-26	Uniform flows		
04-Feb-26	line sources, line sinks, line doublets		
05-Feb-26	do		
Week-3			
09-Feb-26	two dimensional image systems		
10-Feb-26	do		
11-Feb-26	Milne-Thomson's circle theorem		
12-Feb-26	do		
Week-4			
16-Feb-26	Use of conformal transformation,		
17-Feb-26	Karman Vortex the conformal transformation.		
18-Feb-26	Vortex Rows,		
19-Feb-26	single and double infinite rows.		
Week-5		UNIT-2	
23-Feb-26	Gas Dynamics: Compressibility effects in real fluids		
24-Feb-26	do		
25-Feb-26	The elements of wave motions,		
26-Feb-26	do		
Week-6			
02-Mar-26	The speed of sound in a gas		
03-Mar-26	do		
05-Mar-26	equations of motion of a gas		
Week-7			
09-Mar-26	Subsonic		
10-Mar-26	Sonic and Supersonic Flows		
11-Mar-26	Isentropic gas flow		
12-Mar-26	flow through a nozzle, Shock waves		

Week-8	UNIT-3
16-Mar-26	Viscosity and Strms components in a real fluid.
17-Mar-26	do
18-Mar-26	Relations between rectangular components of stress.
19-Mar-26	do
Week-9	
23-Mar-26	Gradients of velocity.
24-Mar-26	do
25-Mar-26	Connection between stresses and gradients of velocity.
26-Mar-26	do
Week-10	
30-Mar-26	Equations of motion in cylindrical and spherical polar section co-ordinates
31-Mar-26	Steady flow low through tube of uniform cross-Flow between concentric routing cylinders
01-Apr-26	Viscous flow in tubes of uniform cross-section
02-Apr-26	Theory of lubrication
Week-11	UNIT-4
06-Apr-26	Buckingham It-theorem. Prandit's boundary layer.
07-Apr-26	do
08-Apr-26	Boundary layer equation in two-disional analysi Dynamical similarity
09-Apr-26	Inspection analysis.
Week-12	
13-Apr-26	Reynolds number.
14-Apr-26	do
15-Apr-26	Dissensional analysin solution.
16-Apr-26	do
Week-13	
20-Apr-26	Boundary layer thickness
21-Apr-26	do
22-Apr-26	do
23-Apr-26	do
Week-14	
27-Apr-26	displacement thickness,
28-Apr-26	do
29-Apr-26	momentum thickness Blasius
30-Apr-26	do