

Lesson Plan Format
18 weeks (From January 2018 to April 2018)

Name of Assistant /Associate Professor : Suman Kumari
 Class and Section : M.Sc (P) II Sem
 Subject : Mathematics
 Paper : Integral eqns and Calculus of variations

Week 1(January 1-6)	
Chapter 1	
01/01/2018	Introduction to Integral Equations, Some basic identities.
02/01/2018	Initial v. Problem reduced to Volterra Integral Eqn.
03/01/2018	Methods of Successive Substitution and Successive approximation.
04/01/2018	Iterated kernels and Neumann Series for Volterra eqn.
05/01/2018	Resolvent kernel as a series, Laplace Transform method.
06/01/2017	— do —
Week 2(January 8-13)	
Chapter	
08/01/2018	Solution of Volterra Integral Equation.
09/01/2018	— do —
10/01/2018	Revision.
11/01/2018	Revision.
12/01/2018	Class Test.
13/01/2018	Assignment.
Week 3(January 15-20)	
Chapter	
15/01/2018	Introduction to B.V.P reduced to Fredholm Int eqn.
16/01/2018	Methods of Successive approximation and Successive.
17/01/2018	substitution to solve Fredholm eqn of 2nd kind.
18/01/2018	— do —
19/01/2018	Questions related to S.A.M.
19/01/2018	Iterated kernels.
20/01/2018	Neumann Series for Fredholm eqns.
Week 4(January 22-27)	
Chapter	
22/01/2018	Vasant Panchmi
23/01/2018	Revision.
24/01/2018	Six Chhotu Ram Jayanti
25/01/2018	Revision.
26/01/2018	Republic Day.

27/01/2018	Questions related to Neumann series for Fredholm eqn.
Week 5 (January 29- Feb 3)	
Chapter	
29/01/2018	Revision.
30/01/2018	Class Test
31/01/2018	Assignment.
01/02/2018	Introduction to Resolvent Kernel as a sum of Series.
02/02/2018	Questions related to Resolvent kernel.
03/02/2018	Fredholm resolvent Kernel as a ratio of two series.
Week 6 (Feb 5-10)	
Chapter	
05/02/2018	Questions related to Fredholm resolvent Kernel.
06/02/2018	Revision.
07/02/2018	Revision.
08/02/2018	Fredholm eqns with separable kernel.
09/02/2018	Questions related to Fredholm eqn. with separable kernel.
10/02/2018	Maharshi Dayanand Saraswati Jayanti
Week 7 (Feb 12-17)	
Chapter	
12/02/2017	Revision.
13/02/2017	Maha Shiv Ratri.
14/02/2017	Class Test.
15/02/2017	Assignment.
16/02/2017	Approximation of a kernel by a separable kernel.
17/02/2017	Questions.
Week 8 (Feb 19-24)	
Chapter	
19/02/2018	Fredholm Alternative.
20/02/2018	Non-Homog. Fredholm eqn with degenerate kernel.
21/02/2018	Question.
22/02/2018	Revision.
23/02/2018	Revision.
24/02/2018	Class Test.
Week 9 (Feb 26-March 03)	
Chapter	
26/02/2018	Introduction to Green function.
27/02/2018	use of method of variation of parameters to construct Green fun.
28/02/2018	Holi
01/03/2018	Holiday

02/03/2018	
03/03/2018	Holiday
Week 10(March 5-10)	
Chapter	
05/03/2018	
06/03/2018	Questions, related to Green fun.
07/03/2018	— do —
08/03/2018	Introduction to Basic Properties of Greenfunction.
09/03/2018	Alternate procedure for Construction of Green function.
10/03/2018	Questions.
	— do —
Week 11(March 12-17)	
Chapter	
12/03/2018	Reduction of B.V.P. to a Fredholm Integral eqn.
13/03/2018	Questions.
14/03/2018	— do —
15/03/2018	Hilbert - Schmidt theory for symmetric kernel.
16/03/2018	— do —
17/03/2018	Revision.
Week 12(March 19-24)	
Chapter	
19/03/2018	Problem Class.
20/03/2018	Problem Class.
21/03/2018	Class Test.
22/03/2018	class Test.
23/03/2018	Shaheed's Divas.
24/03/2018	Assignment
Week 13(March 26-31)	
Chapter	
26/03/2018	Introduction to Motivating problems of Calculus of Variations
27/03/2018	Shortest distance, Minimum Surface of revolution.
28/03/2018	— Questions related to shortest distance.
29/03/2018	Mahavir Jayanti
30/03/2018	Brachistochrone Problem, Riemann's Problems.
31/03/2018	Questions.
Week 14(April 02-07)	
Chapter	
02/04/2018	— do —
03/04/2018	Geodesic, Fundamental lemma of Calculus of Variation
04/04/2018	Euler eqn for one dependent fun. and its Generalization.

05/04/2018

06/04/2018

07/04/2018

Problems related to Euler eqn.

— do —

— do —

Week 15(April 09-14)

Chapter

09/04/2018

10/04/2018

11/04/2018

12/04/2018

13/04/2018

14/04/2018

Euler eqn and its generalization to 'n' dependent
Funs.

— Problems —

— do —

Introduction to Conditional extremum under geometric
constraints and under Integral constraints

B.R. Ambedkar Jayanti

Week 16(April 16-21)

Chapter

16/04/2018

17/04/2018

18/04/2018

19/04/2018

20/04/2018

21/04/2018

Problem class

Problem class

Parshuram Jayanti

Class Test

Assignment

Syllabus Completed

Week 17(April 23-28)

Chapter

23/04/2017

24/04/2017

25/04/2017

26/04/2017

27/04/2017

28/04/2018

Revision —

— do —

— do —

— do —

— do —

— do —

Week 18(April 29-30)

Chapter

30/04/2018

Class Test.