Saraswati Mahila Mahavidyalaya, Palwal

 **Lesson Plan**

**Name of the Assistant/Associate Professor:Ms. AMRITA AGGARW**

**Class and Section:B.A IISEM (I YR)**

**Name of subject:Special Function &Integral Equations**

**Subject Lesson Plan : 18 weeks(from January 2018 to April 2018)**

**(Note: Prepare as per list of holidays declared by Haryana govt.)**

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| **WEEK 1** |
| **ASSIGNMENT:** |
| **WEEK 1,DAY1 ,DATE :01/01/2018(MONDAY)** |
| **Introduction of Laplace transformation,Lapiace transform of some elementaryfunctions,Linear property of Laplace transform**  |
| **WEEK 1 ,DAY 2 ,DATE :02/01/2018(TUESDAY)** |
| **Illustrations of Laplace transformation** |
| **WEEK 1,DAY 3 ,DATE :03/01/2018(WEDNESDAY)** |
| **Introduction of First shifting property,some standards result,change of Scale property&its illustrations** |
| **WEEK 1 ,DAY 4 ,DATE :04/01/2018(THURSDAY)** |
| **Function of Exponential order,Second shifting theorem&its illustrations** |
| **WEEK 1,DAY 5 ,DATE :05/01/2018(FRIDAY)** |
|  **Holiday on account of Guru Govind Singh’s Birthday** |
| **WEEK 1 ,DAY 6 ,DATE :06/01/2018(SATURDAY)** |
| **Laplace tranform of nth order derivative,Effect of multiplication of F(t) by power of t in finding Laplace Transform,Effectof division of F(t) by t** |
| **WEEK 2** |
| **ASSIGNMENT:** |
| **WEEK 2,DAY1 ,DATE :08/01/2018(MONDAY)** |
| **Illustrations** |
| **WEEK 2 ,DAY 2 ,DATE :09/01/2018(TUESDAY)** |
| **Laplace Tranform of Periodic Function&its illustrations** |
| **WEEK 2,DAY 3 ,DATE :10/01/2018(WEDNESDAY)** |
| **Laplace Tranform of integrals&its illustrations** |
| **WEEK 2 ,DAY 4 ,DATE :11/01/2018(THURSDAY)** |
| **Laplace Tranform of some special functions,Laplace Transform ofExponential integral functions,Laplace Transform of Sine integral** |
| **WEEK 2,DAY 5 ,DATE :12/01/2018(FRIDAY)** |
|  **Illustrations**  |
| **WEEK 2 ,DAY 6 ,DATE :13/01/2018(SATURDAY)** |
|  **Problem Discussions** |
| **WEEK 3** |
| **ASSIGNMENT:Laplace Transform of Periodic functions** |
| **WEEK 3,DAY1 ,DATE :15/01/2018(MONDAY)** |
|  **Introduction of Inverse Laplace Transform&its illustrations** |
| **WEEK 3 ,DAY 2 ,DATE :16/01/2018(TUESDAY)** |
| **Other methods of finding Inverse Laplace Transform&its illustrations** |
| **WEEK 3,DAY 3 ,DATE :17/01/2018(WEDNESDAY)** |
| **Convolution theorem&its illustrations &Assignment discussion** |
| **WEEK 3 ,DAY 4 ,DATE :18/01/2018(THURSDAY)** |
| **Problem discussion&class board test** |
| **WEEK 3,DAY 5 ,DATE :19/01/2018(FRIDAY)** |
|  **Class test** |
| **WEEK 3 ,DAY 6 ,DATE :20/01/2018(SATURDAY)** **Introduction of solution of Differential equationsbyLaplace Transformation&its**  **illustartions** |
| **WEEK 4** |
| **ASSIGNMENT:Inverse Laplace Transform** |
| **WEEK 3,DAY1 ,DATE :22/01/2018(MONDAY)** |
|  **Holiday on account of Basant Panchmi.** |
| **WEEK 4 ,DAY 2 ,DATE :23/01/2018(TUESDAY)** |
| **Solution of ODE with variable cofficient by Laplace Transform method &its illustrations&Assignment Discussion** |
| **WEEK 4,DAY 3 ,DATE :24/01/2018(WEDNESDAY)** |
|  **Holiday on account of Sir Chotu Ram Jayanti.** |
| **WEEK 4 ,DAY 4 ,DATE :25/01/2018(THURSDAY)** |
| **Solutions of Simultaneous linear equations with constant cofficients by transform method&its illustrations** |
| **WEEK 4,DAY 5 ,DATE :26/01/2018(FRIDAY)** |
|  **Holiday on account of Republic Day.** |
| **WEEK 4 ,DAY 6 ,DATE :27/01/2018(SATURDAY)** |
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| **WEEK 5** |
| **ASSIGNMENT:Laplace Transform of Integrals** |
| **WEEK 5,DAY1 ,DATE :29/01/2018(MONDAY)** |
|  **Introduction of Fourier Transform,Linear property,Change of Scale property,** **Shifting property,Modulation property** |
|  **WEEK 5 ,DAY 2 ,DATE :30/01/2018(TUESDAY)** |
| **Illustrations of Fourier Trnsform** |
| **WEEK 5,DAY 3 ,DATE :31/01/2018(WEDNESDAY)** |
|  **Holiday on account of Guru Ravi Dass Jayanti** |
| **WEEK 5 ,DAY 4 ,DATE :01/02/2018(THURSDAY)** |
| **Examples based on Fourier Sine&Cosine Transform** |
| **WEEK 5,DAY 5 ,DATE :02/02/2018(FRIDAY)** |
|  **Examples based on use of Fourier Transforms,Assignment checking&Discussion**  |
| **WEEK 5 ,DAY 6 ,DATE :03/02/2018(SATURDAY)** **Convolution theorem for Fourier Transform,Fourier Transform of the Derivative,Relation b/w Fourier&Laplace Transform**  |
| **WEEK 6** |
| **ASSIGNMENT:Convolution Theorem** |
| **WEEK 6,DAY1 ,DATE :05/02/2018(MONDAY)** |
|  **Finite Sine &Cosine Transform of F(x)&its illustration**  |
| **WEEK 6 ,DAY 2 ,DATE :06/02/2018(TUESDAY)** |
| **Problem discussion of Assignment** |
| **WEEK 6,DAY 3 ,DATE :07/02/2018(WEDNESDAY)** |
| **Problem Discussion** |
| **WEEK 6 ,DAY 4 ,DATE :08/02/2018(THURSDAY)** |
| **Problem Discussion** |
| **WEEK 6,DAY 5 ,DATE :09/02/2018(FRIDAY)** |
|  **Solution of Differntial equations by Fourier Transform** |
| **WEEK 6 ,DAY 6 ,DATE :10/02/2018(SATURDAY)** |
|  **Holiday on account of Maharshi Dayanand Saraswati Jayanti.** |
| **WEEK 7** |
| **ASSIGNMENT:Parsevals Identity for Fourier Transform** |
| **WEEK 7,DAY1 ,DATE :12/02/2018(MONDAY)** |
|  **Illustrations&Problem discussion**  |
| **WEEK 7 ,DAY 2 ,DATE :13/02/2018(TUESDAY)** |
| **Holiday on account of Maha Shivaratri.** |
| **WEEK 7,DAY 3 ,DATE :14/02/2018(WEDNESDAY)** |
| **Class board test&Problem discussion of Assignment** |
| **WEEK 7 ,DAY 4 ,DATE :15/02/2018(THURSDAY)** |
| **Introduction of Power series,Convergence of Power series,Interval of convergence,Shifting of Summation index&its illustrations** |
| **WEEK 7,DAY 5 ,DATE :16/02/2018(FRIDAY)** |
|  **Introduction of Analytic funtion,Ordinary&Singular points of Differential equation&its illustrations**  |
| **WEEK 7 ,DAY 6 ,DATE :17/01/2018(SATURDAY)** |
|  **Existence of Power series solution&its illustrations**  |
| **WEEK 8** |
| **ASSIGNMENT:Convergence of Power series** |
| **WEEK 8,DAY1 ,DATE :19/02/2018(MONDAY)** |
|  **Frobenius method&its illustrations(case-1)**  |
| **WEEK 8 ,DAY 2 ,DATE :20/02/2018(TUESDAY)** |
| **Frobenius method(case-2)&its illustrations** |
| **WEEK 8,DAY 3 ,DATE :21/02/2018(WEDNESDAY)** |
| **Frobenius method(case-3)&its illustrations** |
| **WEEK 8 ,DAY 4 ,DATE :22/02/2018(THURSDAY)** |
| **Frobenius method(case-4)&its illustrations** |
| **WEEK 8,DAY 5 ,DATE :23/02/2018(FRIDAY)** |
|  **Some Miscellaneous examples&Discussion of Assignment** |
| **WEEK 8 ,DAY 6 ,DATE :24/02/2018(SATURDAY)** |
|  **Problem Discussion**  |
| **WEEK 9** |
| **ASSIGNMENT:Frobenius method(2)** |
| **WEEK 9,DAY1 ,DATE :26/02/2018(MONDAY)** |
|  **Problem discussion**  |
| **WEEK 9 ,DAY 2 ,DATE :27/02/2018(TUESDAY)** |
| **Class test of Power series** |
| **WEEK 9,DAY 3 ,DATE :28/02/2018(WEDNESDAY)** |
|  **VACATION -II** |
| **WEEK 9 ,DAY 4 ,DATE :01/03/2018(THURSDAY)** |
|  **VACATION -II** |
| **WEEK 9,DAY 5 ,DATE :02/03/2018(FRIDAY)** |
|  **VACATION -II** |
| **WEEK 9 ,DAY 6 ,DATE :03/03/2018(SATURDAY)** |
|  **VACATION -II** |
| **WEEK 10** |
| **ASSIGNMENT:Some questions of Fourier Transform**  |
| **WEEK 10,DAY1 ,DATE :05/03/2018(MONDAY)** |
|  **Introduction of Beta function,Gamma function,Bessel's equation,solution of Bessel's equation.Bessel's function** |
| **WEEK 10,DAY 2 ,DATE :06/03/2018(TUESDAY)** |
| **Theorems of Bessel's functions,Recurrence Relation of Bessei's function&its illustrations** |
| **WEEK 10,DAY 3 ,DATE :07/03/2018(WEDNESDAY)** |
| **Illustrations&discussion of class test** |
| **WEEK 10,DAY 4 ,DATE :08/03/2018(THURSDAY)** |
| **Generating function,representations of generating function in integrals&its illustrations** |
| **WEEK 10,DAY 5 ,DATE :09/03/2018(FRIDAY)** |
|  **Equations Reducible to Bessel's equation&its illustrations** |
| **WEEK 10 ,DAY 6 ,DATE :10/03/2018(SATURDAY)** |
|  **Orthogonality Relation of Bessel,s function&Discussion of Assignment**  |
| **WEEK 11** |
| **ASSIGNMENT:Theorems of Bessel,s function** |
| **WEEK 11,DAY1 ,DATE :12/03/2018(MONDAY)** |
|  **Problem discussion**  |
| **WEEK 11,DAY 2 ,DATE :13/03/2018(TUESDAY)** |
| **Problem discussion** |
| **WEEK 11,DAY 3 ,DATE :14/03/2018(WEDNESDAY)** |
| **Probiem discussion** |
| **WEEK 11,DAY 4 ,DATE :15/03/2018(THURSDAY)** |
| **Problem discussion of Assignment** |
| **WEEK 11,DAY 5 ,DATE :16/03/2018(FRIDAY)** |
|  **Class-Board test** |
| **WEEK 11 ,DAY 6 ,DATE :17/03/2018(SATURDAY)** |
|  **Group discussion** |
| **WEEK 12** |
| **ASSIGNMENT:Orthogonality Relationof Bessel's function** |
| **WEEK 12,DAY1 ,DATE :19/03/2018(MONDAY)** |
|  **Introduction of Legendre's equation,Solution of Legendre's equation,Radius of Convergence of Legendre's solution**  |
| **WEEK 12,DAY 2 ,DATE :20/03/2018(TUESDAY)** |
| **Legendre's Polynomial&Rodrigue's Formula** |
| **WEEK 12,DAY 3 ,DATE :21/03/2018(WEDNESDAY)** |
| **Derivatives of Legendre's Polynomials from Rodrigue's formula,Derivation of Legendre's function of Ist kind** |
| **WEEK 12,DAY 4 ,DATE :22/03/2018(THURSDAY)** |
| **Generating function &its illustrations** |
| **WEEK 12,DAY 5 ,DATE :23/03/2018(FRIDAY)** |
|  **Holiday on account of Shahidi diwas.** |
| **WEEK 12 ,DAY 6 ,DATE :24/03/2018(SATURDAY)** |
|  **Problem discussion of Assignment**  |
| **WEEK 13** |
| **ASSIGNMENT:Rodrigue's Formula** |
| **WEEK 13,DAY1 ,DATE :26/03/2018(MONDAY)** |
|  **Problem discussion** |
| **WEEK 13,DAY 2 ,DATE :27/03/2018(TUESDAY)** |
| **Recurrence Relations&its illustrations** |
| **WEEK 13,DAY 3 ,DATE :28/03/2018(WEDNESDAY)** |
| **Orthogonality of Legendre's Polynomial** |
| **WEEK 13,DAY 4 ,DATE :29/03/2018(THURSDAY)** |
|  **Holiday on account of Mahavir jayanti.** |
| **WEEK 13,DAY 5 ,DATE :30/03/2018(FRIDAY)** |
|  **Laplace Integral representation of Legendre's Polynomial&its illustrations**  |
| **WEEK 13 ,DAY 6 ,DATE :31/03/2018(SATURDAY)** |
|  **Illustrations&Problem discussion of Assignment** |
| **WEEK 14** |
| **ASSIGNMENT:Orthogonality of Legendre's Polynomial** |
| **WEEK 14,DAY1 ,DATE :02/04/2018(MONDAY)** |
|  **Problem discussion** |
| **WEEK 14,DAY 2 ,DATE :03/04/2018(TUESDAY)** |
|  **Problem discussion** |
| **WEEK 14,DAY 3 ,DATE :04/04/2018(WEDNESDAY)** |
| **Problem discussion** |
| **WEEK 14,DAY 4 ,DATE :05/04/2018(THURSDAY)** |
| **Class-board test** |
| **WEEK 14,DAY 5 ,DATE :06/04/2018(FRIDAY)** |
|  **Introduction of Hermite's equation,Solution of Hermite's equations** |
| **WEEK 14 ,DAY 6 ,DATE :07/04/2018(SATURDAY)** |
|  **Hermite's pPolynomial,Discussion of Assignment** |
| **WEEK 15** |
| **ASSIGNMENT:** |
| **WEEK 15,DAY1 ,DATE :09/04/2018(MONDAY)** |
|  **Generating functions for Hermite's Polynomial**  |
| **WEEK 15,DAY 2 ,DATE :10/04/2018(TUESDAY)** |
|  **Rodrigue's formula&Derivation of Hermite's Polynomial from Rodrigue's formula**  |
| **WEEK 15,DAY 3 ,DATE :11/04/2018(WEDNESDAY)** |
| **Recurrence Relations** |
| **WEEK 15,DAY 4 ,DATE :12/04/2018(THURSDAY)** |
| **Illustrations** |
| **WEEK 15,DAY 5 ,DATE :13/04/2018(FRIDAY)** |
|  **Illustrations** |
| **WEEK 15 ,DAY 6 ,DATE :14/04/2018(SATURDAY)** |
| **Holiday on account of Vaisakhi & Dr B.R. Ambedkar’s Jayanti.** |
| **WEEK 16** |
| **ASSIGNMENT:Recurrence Relation** |
| **WEEK 16,DAY1 ,DATE :16/04/2018(MONDAY)** |
|  **Orthogonal property of Hermite's Polynomial** |
| **WEEK 16,DAY 2 ,DATE :17/04/2018(TUESDAY)** |
|  **Illustrations** |
| **WEEK 16,DAY 3 ,DATE :18/04/2018(WEDNESDAY)** |
| **Holiday on account of Maharshi Pasuram Jayanti** |
| **WEEK 16,DAY 4 ,DATE :19/04/2018(THURSDAY)** |
| **Illustrations** |
| **WEEK 16,DAY 5 ,DATE :20/04/2018(FRIDAY)** |
|  **Problem discussion** |
| **WEEK 16 ,DAY 6 ,DATE :21/04/2018(SATURDAY)** |
|  **Problem discussion**  |
| **WEEK 17** |
| **ASSIGNMENT:** |
| **WEEK 17,DAY1 ,DATE :23/04/2018(MONDAY)** |
|  **Revision**  |
| **WEEK 17,DAY 2 ,DATE :24/04/2018(TUESDAY)** |
|  **Revision**  |
| **WEEK 17,DAY 3 ,DATE :25/04/2018(WEDNESDAY)** |
| **Revision**  |
| **WEEK 17,DAY 4 ,DATE :26/04/2018(THURSDAY)** |
| **Revision**  |
| **WEEK 17,DAY 5 ,DATE :27/04/2018(FRIDAY)** |
| **Revision**  |
| **WEEK 17 ,DAY 6 ,DATE :28/04/2018(SATURDAY)** |
| **Revision**  |
| **WEEK 18** |
| **ASSIGNMENT:** |
| **WEEK 18,DAY1 ,DATE :30/04/2018(MONDAY)** |
| **Revision**  |