

Govt. College for Girls, Padha (Karnal)

## Lesson Plan for Even Semester

(January - April, 2024)

Name of the teacher-

Class- BA 4<sup>TH</sup> SEM

Subject- Maths

Paper- SPECIAL FUNCTIONS AND INTEGRAL TRANSFORMS

1 <sup>st</sup> Week 1-6 January	Series solution of differential equations : Power series method.
7 January	<b>Sunday</b>
2 <sup>nd</sup> Week 8-13 January	Definitions of Beta and Gamma functions.
14 January	<b>Sunday</b>
3 <sup>rd</sup> Week 15-16 January	Bessel equation and its solution : Bessel functions and their properties-convergence.
17 January	<b>Shri Guru Gobind Singh Jayanti</b>
18-20 January	Recurrence relations and generating functions.
21 January	<b>Sunday</b>
4 <sup>th</sup> Week 22-25 January	<i>Orthogonality of Bessel functions.</i>
26 January	<b>Republic Day</b>
28 January	<b>Sunday</b>
5 <sup>th</sup> Week 29 January-3 February	Legendre and Hermite differential equations and their solutions: Legendre and Hermite's polynomials.
4 February	<b>Sunday</b>
2 <sup>nd</sup> Week 5-10 February	Orthogonality of Legendre and Hermite's polynomials.

<b>11 February</b>	<b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>12-13 February</b>	Rodrigue's formula for Legendre and Hermite polynomials.
<b>14 February</b>	<b>Basant Panchmi/ Sir Chotu Ram Jayanti</b>
<b>15-17 February</b>	Laplace integral Representation of Legendre polynomials.
<b>18 February</b>	<b>Sunday</b>
<b>4<sup>th</sup> Week</b> <b>19-23 February</b>	Infinite series: Convergence and divergence of infinite series.
<b>24 February</b>	<b>Guru Ravidas Jayanti</b>
<b>25 February</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>26 February-2 March</b>	Laplace Transforms : Existence theorem for Laplace transforms.
<b>3 March</b>	<b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>4-7 March</b>	Linearity of the laplace transforms, shifting theorems.
<b>8 March</b>	<b>Mahashivratri</b>
<b>9 March</b>	Convolution theorem , inverse laplace transforms.
<b>10 March</b>	<b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>11-16 March</b>	Convolution theorem , inverse Laplace transforms.
<b>17 March</b>	<b>Sunday</b>
<b>4<sup>th</sup> Week</b> <b>18-22 March</b>	Convolution theorem, Inverse Laplace transforms of derivatives and integrals.
<b>23 March</b>	<b>Vacations (Holi)</b>
<b>24 March</b>	
<b>5<sup>th</sup> Week</b> <b>25-30 March</b>	

<b>31 March</b>	
<b>1<sup>st</sup> Week</b> <b>1-6 April</b>	Solution of ordinary differential equations using Laplace transform.
<b>7 April</b>	<b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>8-10 April</b>	Fourier transforms: Linearity property, Shifting, Modulation, Convolution theorem.
<b>11 April</b>	<b>Id-Ul-Fitar</b>
<b>12 April</b>	Fourier transforms of derivatives, Relation between Fourier transform and Laplace transform.
<b>13 April</b>	<b>Baisakhi</b>
<b>14 April</b>	<b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>15-16 April</b>	Parseval's identity for Fourier transforms.
<b>17 April</b>	<b>Ramnavmi</b>
<b>18-20 April</b>	Solution of differential equations using Fourier transforms.
<b>21 April</b>	<b>Sunday</b>
<b>4<sup>th</sup> Week</b> <b>22-27 April</b>	Test and Revision.
<b>28 April</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>29-30 April</b>	Test and Revision.