

Baba fateh Singh ji Govt. College, Assandh, Karnal

Department of Mathematics [Special Function and  
Class B.A.-2, 4th sem. integral transforms]

Date/Month Lesson Plan

Sr.No	Date/Month	Lesson Plan
1	Week 1 Jan-1-6 2024	Radius of Convergence of Power Series. ordinary and singular points of D.E. <sup>n</sup> solution of Power Series.
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7	Week 2 Jan-8-13 2024	Frobenius Method Series solution about 0. When the roots of indicial eq <sup>n</sup> are unequal and differ by an integer
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13	Week 3 Jan-15-20 2024	When unequal and differ by an integer and making a coefficient indeterminate. Beta function and Gamma function
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19	Week-4 Jan-22-27 2024	Solution of Bessel's eq <sup>n</sup> . Derivative of Bessel's eq <sup>n</sup> . Integration of Bessel's eq <sup>n</sup> . Orthogonality of Bessel function.
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25	Week-5 Jan 29 - Feb 3 2024	Legendre and Hermite diff. eq <sup>n</sup> . and their solution. Legendre and Hermite function and their property.
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31	Week-6 Feb-5-10 2024	Recurrence relation and generating function orthogonality of Legendre and Hermite polynomials.
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43	Week 7 Feb-12-17 2024	Rodrigues' formula for Legendre and Hermite polynomials.
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47	Week-8 Feb-19-24 2024	Laplace integral representation of Legendre polynomial. Laplace transformation.
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54	Week-9 Feb 26-March 2 2024	Existence th <sup>m</sup> for Laplace transform. Linearity of the Laplace transform. Shifting theorems. Use of shifting th <sup>m</sup> .
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63	Week-10 March 4-9 2024	Laplace transforms of derivatives and integrals. Differentiation of Laplace transform.
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70	Week-11 March 11-16 2024	Integration of Laplace transform. convolution th <sup>m</sup> . Inverse Laplace transform of derivative and integrals.
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77	Week-12 March 18-22 2024	Solution of ordinary differential equation by using Laplace transform
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83	Week-13 April 1-6 2024	Fourier transform. Linearity property, shifting, modulation, convolution theorems.
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94	Week-14	Fourier transform of derivatives.
95	April 8-13	Relation between Fourier transform
96	2024	and Laplace transform.
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100	Week-15	Parseval's identity for Fourier
101	April 15-20	transform.
102	2024	Solution of Linear differential
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106	Week-16	Equations with constant coefficients
107	April 22-27	by transform method.
108	2024	Revision.
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114	Week-17	Revision.
115	April 29-30	Test.
116	2024	
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120	Week-18	
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126	Week-19	
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