

Lesson Plan

Name of the Faculty : Bipasha Pal
Discipline : B. Tech. (CE).
Semester : Second Semester.
Subject : Mathematics-II
Lesson Plan duration : 40 Lectures (From January 8, 2018 to April 27, 2018).

Lectures	Topic (including assignment and test)
L-1	Introduction of Ordinary Differential Equations along with revision.
L-2	Exact Differential Equation.
L-3	EDE continued.
L-4	-----do-----
L-5	Newton's law of cooling
L-6	Linear differential equation of second order
L-7	Complete solutions of LDESO
L-8	-----do-----
L-9	Cauchy and lagrange linear equation
L-10	Linear differential equation with constant coefficient
L-11	Laplace transform
L-12	Properties of Laplace transform
L-13	Existence conditions
L-14	Laplace transform of derivatives.
L-15	Laplace transform of integrals.
L-16	-----do-----
L-17	Evaluation of integral
L-18	Laplace transform of unit step , impulse and periodic function
L-19	Application of LDE with constant coefficient
L-20	-----do-----
L-21	Exponential function
L-22	Trigonometric function
L-23	Hyperbolic and logarithmic function
L-24	C-R equations
L-25	Analytic function
L-26	Harmonic function
L-27	Cauchy integral
L-28	Power series and ROC

L-29	Taylor and Laurent series
L-30	Singularity and residue
L-31	Condition for fourier series expansion
L-32	Euler's formula
L-33	-----do-----
L-34	FSE of odd and even function
L-35	FSE of square and rectangular wave
L-36	Half range sine and cosine series
L-37	-----do-----
L-38	Fourier integral and transform
L-39	-----do-----
L-40	Fourier transform of dirac-delta function

Minor Tests

1. Minor Test-I Feb. 14-16, 2018
2. Minor Test-II April 4-6, 2018

Lesson Plan

Name of the Faculty : Suman Panwar

Discipline : B.Tech. (Chemical engineering)

Semester : Second Semester

Subject : Numerical Methods

Lesson Plan duration : 40 Lectures (From January 8, 2018 to April 27, 2018).

Lectures	Topic (including assignment and test)
L-1	Interpolation problems .
L-2	Lagrangian polynomials.
L-3	Divided Difference.
L-4	Interpolating with a Cubic Spline
L-5	Bezier curves and B-spline curves
L-6	Least Square approximation
L-7	Bisection method
L-8	Linear interpolation method
L-9	Newton's method
L-10	Fixed Point method and Muller's method
	CLASS TEST
L-11	Elimination method
L-12	Gauss and Gauss-Jordan method.
L-13	Jacobi method and Gauss-Seidal method
L-14	Relaxation method.
L-15	Derivative from difference tables and Higher order derivatives
L-16	Extrapolation techniques
L-17	Newton-cotes integration formula
L-18	Trapezoidal rule and Simpson's rule
L-19	Boole's rule and Weedle's rule
L-20	Romberg's integration
	CLASS TEST
L-21	Taylor series method
L-22	Euler and modified Euler method
L-23	Euler and modified Euler method continued
L-24	-----do-----
L-25	Runge-Kutta Method
L-26	Runge-Kutta Method continued
L-27	Milne's method
L-28	Adams-Moulton method.
L-29	Power method for Eigen values by integration.
L-30	Power method for Eigen values by integration

	continued.
	CLASS TEST
L-31	Finite difference approximations of partial derivatives
L-32	Solution of Laplace equation(standard 5 point formula only)
L-33	Solution of Laplace equation continued
L-34	One-dimensional heat equation
L-35	Schmidt method
L-36	Crank-Nicolson method
L-37	Example based on Crank-Nicolson method
L-38	-----do-----
L-39	Dufort and Frankel method
L-40	Wave equation.
	CLASS TEST

Minor Tests

1. Minor Test-I Feb. 14-16, 2018
2. Minor Test-II April 4-6, 2018

Lesson Plan

Name of the Faculty : Mr.Kapil Kumar

Discipline : B. Tech (BM&BT Engineering).

Semester : Second Semester.

Subject : Mathematics-II.

Lesson Plan duration : 36 Lectures (From January 8, 2018 to April 27, 2018).

Lectures	Topic (including assignment and test)
L-1	Introduction of Ordinary Differential Equations along with revision.
L-2	Exact Differential Equation.
L-3	Equations reducible to exact.
L-4	-----do-----
L-5	-----do-----
L-6	Electric circuit and Newton's law of cooling
L-7	Heat flow and orthogonal trajectories
L-8	Linear Differential Equations With Constant Coefficients.
L-9	LDE with Constant Coefficients Continued.
L-10	-----do-----
L-11	-----do-----
L-12	Cauchy's homogeneous differential equations
L-13	Lagrange's Homogeneous linear differential equations
L-14	Simultaneous linear differential equations
L-15	Laplace Transform, definition, Linear properties, 1 st shifting property
L-16	Change of scale properties, derivative property, integral property, division property
L-17	Inverse Laplace transformation: By using partial fraction
L-18	Convolution theorem, 2 nd shifting property, unit step function
L-19	----do-----
L-20	Continued.
L-21	Application of Laplace Transform to ODE
	CLASS TEST
L-22	Fourier Series
L-23	Fourier series of discontinuous functions
L-24	Change of intervals
L-25	-----Do-----

L-26	Half – Range cosine and series
L-27	Fourier Transform
L-28	-----do-----
L-29	-----do-----
L-30	Complex functions: Exponential function, hyperbolic function, circular function
	----do-----
L-31	-----do-----
L-32	Functions of complex variables, analytic function, C-R equations
L-33	-----do-----
L-34	-----do-----
L-35	Line integral, Cauchy integral theorem and formula
L-36	Power series, radius of convergence and residue theorem.
	CLASS TEST

Minor Tests

1. Minor Test-I Feb. 14-16, 2018
2. Minor Test-II April 4-6, 2018

Lesson Plan

Name of the Faculty : Prof. R. C. Nautiyal.

Discipline : B.Tech. Chemical Engg.

Semester : Second Semester.

Subject : Mathematics-II.

Lesson Plan duration : 40 Lectures (From January 8, 2018 to April 27, 2018).

Lectures	Topic (including assignment and test)
L-1	Introduction of Ordinary Differential Equations along with revision.
L-2	Exact Differential Equation.
L-3	EDE continued.
L-4	-----do-----
L-5	Applications of First order Differential Equations.
L-6	Applications continued
L-7	Linear Differential Equations of second and Higher order
L-8	-----Continued-----
L-9	Cauchy's and Legendre's Equations.
L-10	Simultaneous Linear Differential Equations
	CLASS TEST
L-11	Introduction of Transforms and Laplace Transforms.
L-12	Properties of Laplace Transforms.
L-13	-----continued-----
L-14	Laplace Transforms of Derivatives and Integrals.
L-15	-----Continued-----
L-16	Laplace Transforms of functions multiplied by t^n
L-17	Laplace Transforms of functions divided by t^n
L-18	Laplace Transforms of Unit step and impulse Functions
L-19	Convolution Theorem.
L-20	Application of Laplace Transforms to Linear differential Equations with constant Coefficients.
	CLASS TEST
L-21	Functions of Complex Variable Definitions and introduction
L-22	Exponential, trigonometric, Logarithmic and Hyperbolic functions
L-23	-----Continued-----
L-24	Limits and Continuity of functions
L-25	Differentiability and Analyticity of functions along with C.R. Conditions

L-26	----- Continued-----
L-27	Harmonic functions and their applications to flow problems.
L-28	Integration of Functions of complex variables.
L-29	Cauchy Integral Theorem and Formula.
L-30	Power Series of Macclaurin's and Laurentz's, Residues.
	CLASS TEST
L-31	Euler's Formulae and Conditions for Fourier Expansion
L-32	Change of Interval and applications
L-33	Fourier Expansion of Even and Odd functions
L-34	-----Continued-----
L-35	Fourier expansion of Square Wave and Rectangular wave Functions.
L-36	Introduction of Fourier Integrals.
L-37	Fourier Transforms
L-38	Properties of Fourier Transforms
L-39	Fourier Transforms of Derivatives and Integrals.
L-40	Convolution Theorem and Derac Delta Function.
	CLASS TEST

Minor Tests

1. Minor Test-I Feb. 14-16, 2018
2. Minor Test-II April 4-6, 2018

Lesson Plan

Name of the Faculty : Suman Panwar
Discipline : B.tech. (Computer Science)
Semester : Second Semester
Subject : Mathematics-II
Lesson Plan duration : 40 Lectures (From January 8, 2018 to April 27, 2018).

Lectures	Topic (including assignment and test)
L-1	Exact differential equation.
L-2	Application of differential equation of first order and first degree
L-3	Newton's law ,heat law and orthogonal trajectories
L-4	Linear differential equation of second and higher degree
L-5	Complete solution ,complementary function and particular solution
L-6	Method of variation of parameter.
L-7	Cauchy's and Legendre's linear equation
L-8	Cauchy's and Legendre's linear equation continued
L-9	Simultaneous linear equation with constant coefficient
L-10	Simultaneous linear equation with constant coefficient continued
	CLASS TEST
L-11	Laplace transform and its properties
L-12	Transform of derivatives
L-13	Transform of integrals
L-14	Evaluation of integrals by Laplace transform
L-15	Laplace transform of unit step function ,unit impulse function and periodic function
L-16	Inverse transform
L-17	Convolution theorem
L-18	Application to linear differential equation
L-19	Application to linear differential equation continued
L-20	Application to simultaneous linear differential equation with constant coefficients

	CLASS TEST
L-21	Exponential function , trigonometric and hyperbolic function and logarithmic function
L-22	Limit and continuity of a function
L-23	Differentiability and analyticity
L-24	C-R equations
L-25	Polar form of C-R equations
L-26	Harmonic function and application to flow problem
L-27	Integration of complex function and Cauchy's integral theorem
L-28	Power series
L-29	Taylor's , Maclaurin's and Laurent's series
L-30	Zeros and singularities of complex functions
	CLASS TEST
L-31	Euler's formula and Fourier expansion
L-32	Fourier expansion of odd and even functions
L-33	Fourier expansion of square wave ,rectangular wave ,sawtoothed wave
L-34	Half range sine and cosine series
L-35	Fourier integrals
L-36	Fourier transforms
L-37	Fourier transform of derivatives
L-38	Fourier transform of integrals
L-39	Convolution theorem
L-40	Fourier transform of Dirac- delta function
	CLASS TEST

Minor Tests

1. Minor Test-I Feb. 14-16, 2018
2. Minor Test-II April 4-6, 2018

Lesson Plan

Name of the Faculty : Sandeep.

Discipline : B. Tech. (ECE).

Semester : Second Semester.

Subject : Mathematics-II

Lesson Plan duration : 40 Lectures (From January 8, 2018 to April 27, 2018).

Lectures	Topic (including assignment and test)
L-1	Introduction of Ordinary Differential Equations along with revision.
L-2	Exact Differential Equation.
L-3	EDE continued.
L-4	-----do-----
L-5	Newton's law of cooling
L-6	Linear differential equation of second order
L-7	Complete solutions of LDES
L-8	-----do-----
L-9	Cauchy and lagrange linear equation
L-10	Linear differential equation with constant coefficient
L-11	Laplace transform
L-12	Properties of Laplace transform
L-13	Existence conditions
L-14	Laplace transform of derivatives.
L-15	Laplace transform of integrals.
L-16	-----do-----
L-17	Evaluation of integral
L-18	Laplace transform of unit step , impulse and periodic function
L-19	Application of LDE with constant coefficient
L-20	-----do-----
L-21	Exponential function
L-22	Trigonometric function
L-23	Hyperbolic and logarithmic function
L-24	C-R equations
L-25	Analytic function
L-26	Harmonic function
L-27	Cauchy integral
L-28	Power series and ROC

L-29	Taylor and Laurent series
L-30	Singularity and residue
L-31	Condition for fourier series expansion
L-32	Euler's formula
L-33	-----do-----
L-34	FSE of odd and even function
L-35	FSE of square and rectangular wave
L-36	Half range sine and cosine series
L-37	-----do-----
L-38	Fourier integral and transform
L-39	-----do-----
L-40	Fourier transform of dirac-delta function

Minor Tests

1. Minor Test-I Feb. 14-16, 2018
2. Minor Test-II April 4-6, 2018

Lesson Plan

Name of the Faculty : Dr. Krishan Kumar.

Discipline : B. Tech Electric Engineering.

Semester : Second Semester.

Subject : Mathematics-II.

Lesson Plan duration : 36 Lectures (From January 8, 2018 to April 27, 2018).

Lectures	Topic (including assignment and test)
L-1	Introduction of Ordinary Differential Equations along with revision.
L-2	Exact Differential Equation.
L-3	Equations reducible to exact.
L-4	-----do-----
L-5	-----do-----
L-6	Electric circuit and Newton's law of cooling
L-7	Heat flow and orthogonal trajectories
L-8	Linear Differential Equations With Constant Coefficients.
L-9	LDE with Constant Coefficients Continued.
L-10	-----do-----
L-11	-----do-----
L-12	Cauchy's homogeneous differential equations
L-13	Lagrange's Homogeneous linear differential equations
L-14	Simultaneous linear differential equations
L-15	Laplace Transform, definition, Linear properties, 1 st shifting property
L-16	Change of scale properties, derivative property, integral property, division property
L-17	Inverse Laplace transformation: By using partial fraction
L-18	Convolution theorem, 2 nd shifting property, unit step function
L-19	----do-----
L-20	Continued.
L-21	Application of Laplace Transform to ODE
	CLASS TEST
L-22	Fourier Series
L-23	Fourier series of discontinuous functions
L-24	Change of intervals
L-25	-----Do-----

L-26	Half – Range cosine and series
L-27	Fourier Transform
L-28	-----do-----
L-29	-----do-----
L-30	Complex functions: Exponential function, hyperbolic function, circular function
	----do-----
L-31	-----do-----
L-32	Functions of complex variables, analytic function, C-R equations
L-33	-----do-----
L-34	-----do-----
L-35	Line integral, Cauchy integral theorem and formula
L-36	Power series, radius of convergence and residue theorem.
	CLASS TEST

Minor Tests

1. Minor Test-I Feb. 14-16, 2018
2. Minor Test-II April 4-6, 2018

Lesson Plan

Name of the Faculty : Dr. Parveen Kumar.

Discipline : B. Tech Mechanical Engineering.

Semester : Second Semester.

Subject : Mathematics-II.

Lesson Plan duration : 36 Lectures (From January 8, 2018 to April 27, 2018).

Lectures	Topic (including assignment and test)
L-1	Introduction of Ordinary Differential Equations along with revision.
L-2	Exact Differential Equation.
L-3	Equations reducible to exact.
L-4	-----do-----
L-5	-----do-----
L-6	Electric circuit and Newton's law of cooling
L-7	Heat flow and orthogonal trajectories
L-8	Linear Differential Equations With Constant Coefficients.
L-9	LDE with Constant Coefficients Continued.
L-10	-----do-----
L-11	-----do-----
L-12	Cauchy's homogeneous differential equations
L-13	Lagrange's Homogeneous linear differential equations
L-14	Simultaneous linear differential equations
L-15	Laplace Transform, definition, Linear properties, 1 st shifting property
L-16	Change of scale properties, derivative property, integral property, division property
L-17	Inverse Laplace transformation: By using partial fraction
L-18	Convolution theorem, 2 nd shifting property, unit step function
L-19	----do-----
L-20	Continued.
L-21	Application of Laplace Transform to ODE
	CLASS TEST
L-22	Fourier Series
L-23	Fourier series of discontinuous functions
L-24	Change of intervals
L-25	-----Do-----

L-26	Half – Range cosine and series
L-27	Fourier Transform
L-28	-----do-----
L-29	-----do-----
L-30	Complex functions: Exponential function, hyperbolic function, circular function
	----do-----
L-31	-----do-----
L-32	Functions of complex variables, analytic function, C-R equations
L-33	-----do-----
L-34	-----do-----
L-35	Line integral, Cauchy integral theorem and formula
L-36	Power series, radius of convergence and residue theorem.
	CLASS TEST

Minor Tests

1. Minor Test-I Feb. 14-16, 2018
2. Minor Test-II April 4-6, 2018