SL.NO	MODULE/LECTURE
1	I/1
2	I/2
3	I/3
4	II/4
5	I/5
6	II/1
7	II/2
8	II/3
9	II/4
10	II/5
11	II/6
12	II/7
13	II/8
14	II/9
15	II/10
16	III/1
17	III/2
18	III/3
19	III/4
20	III/5
21	III/6
22	III/7
23	III/8
24	III/9
25	III/10
26	III/11
27	IV/1

28	IV/2
29	IV/3
30	IV/4
31	IV/5
32	IV/6
33	IV/7
34	IV/8
35	IV/9
36	IV/10
37	IV/11
38	V/1
39	V/2
40	V/3
41	V/4
42	V/5
43	V/6
44	V/7
45	V/8
46	VI/1
47	VI/2
48	VI/3
49	VI/4
50	VI/5
51	VI/6
52	VI/7
53	VI/8
54	VI/9
55	VI/10
56	VI/11
57	VII/12
58	VI/13
59	VI/14
60	VI/15

Learning Resour

Sl.No	Title of

1.	Higher e mathema
2.	Element 1
3.	Text Boo Mathema
4.	Text Boo mathema

LESSON PLAN
ENGINEERING MATHE MATICS -III
3RD SEMISTER ,MATH & SC

TOPIC TO BE COVERED
i) Define rank of a matrix.
ii) Elementary row transformations to determine the rank of a matrix.
i) State Rouche's theorem for consistency of a system of linear equations in n unknowns .
i) Solve equations in three unknowns testing consistency.
i) Solve problems on matrices.
CLASS TEST -1
i) Introduction of linear differential equation
ii) Define Homogeneous and Non – Homogeneous L.D.E with constant coefficients
i) general solution of linear Differential Equations in terms of C.F. and P.I.
i) Discuss some problem on linear Differential Equations in terms of C.F. and P.I.
i) Derive rules for finding C.F. And P.I. in terms of operator D.
i) Define partial differential equation (P.D.E) .
ii) some example regarding partial differential equation.
i) Partial differential equations by eliminating arbitrary constants and arbitrary function .
ii) some example on P.D.E by eliminating arbitrary constants and arbitrary function .
i) Partial differential equations of the form Pp + Qq = R
i) Solve problems on Linear differential equation.
i) Discuss objective type question with answer .
CLASS TEST -2
i) Define Gamma function .
ii) Reduction formula for $\Gamma(n)$
i) Define Laplace Transform of a function f(t).
ii) Condition for the existance.
i) Transforms of elimentary functions.
ii) Some examples of elimentary function.
i) Explain linear, shifting property of L.T.
ii) Linearity property
i) First shifing property.
ii) Application of first shifting property.
i) Change of scale property
ii) Discuss some problem regarding on shifting property of L.T.
i) Laplace transform of derivatives .
ii) Laplace transform of integral.
i) Discuss some problem on L.T. of derivatives and integrals.
i) Inverse Laplace Transform .
ii) Derive formulae of inverse L.T.
i) Explain method of partial fractions .
ii) Discuss some problem regarding on I.L.T. of partial fraction .
i) Solve problems on L.T.
i) Define periodic functions.
ii) Founier Series defination.

iii) Some useful integrals.
i) State Dirichlet's condition for the Fourier expansion of a function.
ii) Convergence of Dirichlet's condition for the Fourier expansion of a function.
i) Express periodic function f(x) satisfying Dirichlet's conditions as a Fourier series.
i) State Euler's formulae.
ii) some examples of Euler's formula.
i) Dirchelet's Condition.
ii) Discontinuous Functions.
i) Define Even and Odd functions and find Fourier Series.
ii) Examples of even and odd functions.
i) Expansion of an Even Function.
ii)Expansion of an odd Function.
i) Half Range Series.
ii) Sine Series and Cosine Series .
i) Obtain F.S of continuous functions and having points of discontinuity.
i) Discuss some problem on fourier series.
i) Discuss objective type question with answer .
i) Introduction of Numerical methods.
ii) Limitation of analytical methods.
i) Bisection method.
ii) some examples of Bisection method.
i) Newton- Raphson method.
ii) some examples of Newton- Raphson method.
i) Discuss exercise of Numerical methods.
i) Explain finite difference and form table of forward and backward difference.
i) Discuss exercise of forword and backword difference.
i) Define shift Operator E .
ii) Relation between E & difference operator Δ
i) Newton's Forward interpolation formula for equal intervals.
ii) Newton's backward interpolation formula for equal intervals.
i)Examples of Newton's forward and backward interpolation formula for equal intervals.
i) State Lagrange's interpretation formula for unequal intervals.
i) Numerical integration and state.
ii) Newton's Cote's formula.
i) Trapezoidal rule.
ii) Some problems of Trapezoidal rule.
i) Simpson's 1/3rd rule
ii) Some problems on Simpson's 1/3rd rule.
i) Discuss exercise of Finite difference & interpolation.
i) Discuss objective type question with answer .
i) Previous year question paper discussion .
i) Previous year question paper discussion .

rces:

the Book	Name of Authors	Name of Publisher

engineering atics	Dr B.S. Grewal	khanna publishers
s of mathematics Vol-	Odisha state bureau of text book preparation and production	
ok of Engineering atics-I	C.R Mallick	Kalayani publication
ok of engineering atics-III	C.R Mallick	Kalayani publication

Signature of the Faculty

DISCIPLINE	SEMESTER
SUBJECT:ENGG.MATHEMATICS-III	NO.OF DAYS/WEEKS CLASS ALLOTED
WEEKS	**CLASS DAY**
1ST	1st
	2nd
	3rd
	4th
2ND	1st
	2nd
	3rd
	4th
3RD	1st
	2nd
	3rd
	4th
4TH	1st
	2nd
	3rd
	4th
5TH	1st
	2nd
	3rd
	4th
6TH	1st
	2nd
	3rd
	4th
7TH	1st
	2nd
	3rd
	4th
8th	1st
	2nd
	3rd
	4th

9TH	1st	
	2nd	
	3rd	
	4th	
10TH	1st	
	2nd	
	3rd	
	4th	
11th	1st	
	2nd	
	3rd	
	4th	
12th	1st	
	2nd	
	3rd	
	4th	
13th	1st	
	2nd	
	3rd	
	4th	
14th	1st	
	2nd	
	3rd	
	4th	
15th	1st	
	2nd	
	3rd	
	4th	

Learning Resources:

Sl.No	Title of the Book
1.	Higher engineering mathematics
2.	Elements of mathe 1
3.	Text Book of Engi Mathematics-I
4.	Text Book of engir mathematics-III

N.B: 8 extra classes may be need

GOVERNMENT POLYTECHNIC JAJPUR

A/ P: Ragadi, Block: Korei, Dist.: Jajpur, Odisha- 755019

ww.gpjajpur.orgE-mail: principalgpjajpur@yahoo.co.in Contact: 9437155107

LESSON PLAN

3RD SEMESTER,MATH & SC

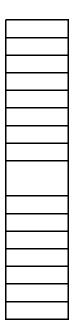| NAME OF THE TEACHING FACULTY: Pragyan Priyadarsini |
| --- |
| SEMESTER FROM DATE :15/09/2022   TO DATE: 22/12/2022 |
| NO.OF WEEKS: 15 |

TOPICS
i) Define rank of a matrix.
ii) Elementary row transformations to determine the rank of a matrix.
iii) State Rouche's theorem for consistency of a system of linear equations in n unknowns .
iv) Solve equations in three unknowns testing consistency.
i) Solve problems on matrices.
ii) Introduction of linear differential equation
iii) general solution of linear Differential Equations in terms of C.F. and P.I.
iv) Discuss some problem on linear Differential Equations in terms of C.F. and P.I.
i) Partial differential equations by eliminating arbitrary constants and arbitrary function .
ii) some example on P.D.E by eliminating arbitrary constants and arbitrary function .
iii)Partial differential equations of the form $Pp + Qq = R$
iv) Solve problems on Linear differential equation.
i) Discuss objective type question with answer .
i) Define Gamma function .
ii) Reduction formula for $\Gamma(n)$
i) Define Laplace Transform of a function f(t).
ii) Condition for the existance.
iii) Transforms of elimentary functions.
iv) Some examples of elimentary function.
i) Explain linear, shifting property of L.T.
ii) First shifing property.
i) Application of first shifting property.
ii) Change of scale property
iv) Discuss some problem regarding on shifting property of L.T.
i) Laplace transform of derivatives .
ii) Laplace transform of integral.
iii) Inverse Laplace Transform .
iv) Derive formulae of inverse L.T.
iii) Explain method of partial fractions .
iv) Discuss some problem regarding on I.L.T. of partial fraction .
v) Solve problems on L.T.
i) Define periodic functions.
ii) Founier Series defination.
i) Some useful integrals.
ii) State Dirichlet's condition for the Fourier expansion of a function.
ii) Convergence of Dirichlet's condition for the Fourier expansion of a function.
iv) Express periodic function f(x) satisfying Dirichlet's conditions as a Fourier series.
v) State Euler's formulae.
vi) some examples of Euler's formula.

i) Dirchelet's Condition.
ii) Discontinuous Functions.
iii) Define Even and Odd functions and find Fourier Series.
iv) Examples of even and odd functions.
v) Expansion of an Even Function.
i)Expansion of an odd Function.
ii) Half Range Series.
i) Sine Series and Cosine Series .
ii) Obtain F.S of continuous functions and having points of discontinuity.
v) Discuss some problem on fourier series.
i) Discuss objective type question with answer .
ii) Introduction of Numerical methods.
iii) Limitation of analytical methods.
iv) Bisection method with some example
i) Newton- Raphson method.
ii) some examples of Newton- Raphson method.
iii) Discuss exercise of Numerical methods.
iv) Explain finite difference and form table of forward and backward difference.
i) Discuss exercise of forword and backword difference.
ii) Define shift Operator E .
iii) Relation between E & difference operator Δ
iv) Newton's Forward interpolation formula for equal intervals.
v) Newton's backward interpolation formula for equal intervals.
i)Examples of Newton's forward and backward interpolation formula for equal intervals.
ii) State Lagrange's interpretation formula for unequal intervals.
iii) Numerical integration and state.
iv) Newton's Cote's formula.
v) Trapezoidal rule.
i) Some problems of Trapezoidal rule.
ii) Simpson's 1/3rd rule
iii) Some problems on Simpson's 1/3rd rule.
iv) Discuss exercise of Finite difference & interpolation.
v) Discuss objective type question with answer .

	Name of Authors	Name of Publisher
g	Dr B.S. Grewal	khanna publishers
ematics Vol-	Odisha state bureau of text book preparation and production	
neering	C.R Mallick	Kalayani publication
neering	C.R Mallick	Kalayani publication

led to complete the course.

LESSON PLAN

3RD SEMESTER, ELECTRICAL

DISCIPLINE	SEMESTER	NAME OF THE TEACHING FACULTY: Pragyan Priyadarsini	
SUBJECT: ENGG. MATHEMATICS-III	NO.OF DAYS/WEEKS CLASS ALLOTED	SEMESTER FROM DATE : TO DATE: NO.OF WEEKS: 16	

WEEKS	CLASS DAY	TOPICS
1st	1st	i) Introduction of complex number
	2nd	ii) Real and Imaginary numbers.
	3rd	iii)Complex numbers, conjugate complex numbers.
	4th	iv) Modulus and Amplitude of a complex v) Geometrical Representation of Complex Numbers vi) Properties of Complex Numbers
2nd	1st	i) Determination of three cube roots of unity and their properties.
	2nd	ii) De Moivre's theorem with example
	3rd	iii) Discuss objective questions
	4th	iv) Solve problems on complex number .
3rd	1st	i) Define rank of a matrix.
	2nd	ii) Elementary row transformations to determine the rank of a matrix.
	3rd	iii) State Rouche's theorem for consistency of a system of linear equations in n unknowns .
	4th	iv) Solve equations in three unknowns testing consistency.
4th	1st	i) Solve problems on matrices.
	2nd	ii) Introduction of linear differential equation **iii) CLASS TEST-1**
	3rd	iv) general solution of linear Differential Equations in terms of C.F. and P.I.
	4th	v) Discuss some problem on linear Differential Equations in terms of C.F. and P.I.
5th	1st	i) Partial differential equations by eliminating arbitrary constants and arbitrary function .
	2nd	ii) some example on P.D.E by eliminating arbitrary constants and arbitrary function .
	3rd	iii)Partial differential equations of the form $Pp + Qq = R$
	4th	iv) Solve problems on Linear differential equation.
6th	1st	i) Discuss objective type question with answer .
	2nd	i) Define Gamma function . ii) Reduction formula for $\Gamma(n)$
	3rd	i) Define Laplace Transform of a function f(t). ii) Condition for the existance. iii) Transforms of elimentary functions.
	4th	i) Some examples of elimentary function. ii) Explain linear, shifting property of L.T.
7th	1st	i) First shifing property.
	2nd	ii) Application of first shifting property. iii) Change of scale property
	3rd	iv) Discuss some problem regarding on shifting property of L.T.
	4th	v) Laplace transform of derivatives . vi) Laplace transform of integral.
8th	1st	i) Inverse Laplace Transform .
	2nd	ii) Derive formulae of inverse L.T.
	3rd	iii) Explain method of partial fractions .
	4th	iv) Discuss some problem regarding on I.L.T. of partial fraction . v) Solve problems on L.T.
9th	1st	i) Define periodic functions. ii) Founier Series defination.
	2nd	iii) Some useful integrals. iv) State Dirichlet's condition for the Fourier expansion of a function.
	3rd	v) Convergence of Dirichlet's condition for the Fourier expansion of a function. vi) Express periodic function f(x) satisfying Dirichlet's conditions as a Fourier series.
	4th	vii) State Euler's formulae. viii) some examples of Euler's formula.
10th	1st	i) Dirchelet's Condition. ii) Discontinuous Functions.
	2nd	i) Define Even and Odd functions and find Fourier Series. ii) Examples of even and odd functions.
	3rd	i) Expansion of an Even Function. ii)Expansion of an odd Function.
	4th	i) Half Range Series.
11th	1st	i) Sine Series and Cosine Series . ii) Obtain F.S of continuous functions and having points of discontinuity.
	2nd	i) Discuss some problem on fourier series. ii) Discuss objective type question with answer . i) Introduction of Numerical methods.

	3rd	ii) Limitation of analytical methods.
	4th	i) Bisection method with some example
12th	1st	i) Newton- Raphson method.
	2nd	ii) some examples of Newton- Raphson method.
	3rd	iii) Discuss exercise of Numerical methods.
	4th	**iv) CLASS TEST -2**
13th	1st	i) Explain finite difference and form table of forward and backward difference.
		ii) Discuss exercise of forword and backword difference.
	2nd	iii) Define shift Operator E .
		iv) Relation between E & difference operator Δ
	3rd	v) Newton's Forward interpolation formula for equal intervals.
	4th	vi) Newton's backward interpolation formula for equal intervals.
14th	1st	i)Examples of Newton's forward and backward interpolation formula for equal intervals.
	2nd	ii) State Lagrange's interpretation formula for unequal intervals.
		iii) Numerical integration and state.
	3rd	iv) Newton's Cote's formula.
	4th	v) Trapezoidal rule.
15th	1st	i) Some problems of Trapezoidal rule.
		ii) Simpson's 1/3rd rule
	2nd	iii) Some problems on Simpson's 1/3rd rule.
	3rd	iv) Discuss exercise of Finite difference & interpolation.
	4th	v) Discuss objective type question with answer .
16th	1st	ii) Discuss previous year questions with answer
	2nd	iii) Discuss previous year questions with answer
	3rd	iv) Discuss previous year questions with answer

Learning Resources:

Sl.No	Title of the Book	Name of Authors	Name of Publisher
1.	Higher engineering mathematics	Dr B.S. Grewal	khanna publishers
2.	Elements of mathematics Vol-1	Odisha state bureau of text book preparation and production	
3.	Text Book of Engineering Mathematics-I	C.R Mallick	Kalayani publication
4.	Text Book of engineering mathematics-III	C.R Mallick	Kalayani publication

Signature of the Faculty