

## **LESSON PLAN**

**DEPARTMENT: MATHEMATICS AND SCIENCE** 

BHUBANANANDA ORISSA SCHOOL OF ENGINEERING, CUTTACK

**ACADEMIC SESSION:-2021-22** 

SEMESTER: - 1<sup>ST</sup> SEM. WINTER-2021

**SUBJECT: - ENGINEERING MATHEMATICS-I** 

Discipline: (All Branch) CIVIL	Semester: 1 <sup>st</sup> Semester	Name of the Teaching Faculty: CHAPALA SAHOO
Subject:	No. of Days/	Semester From: - Date: 25 / 10 / 2021 to 31/
Engineering	per week class allotted	01/2022
Mathematics-I	(Mon, Tue, Wed, Thu, Fri, Sat)	No of Weeks: - 15
Week	Class days & Dates	Theory Topics
1 <sup>st</sup>		1) MATRICES AND DETERMINANTS
	25.10.21	a) Types of matrices
	26.10.21	b) Algebra of matrices
	27.10.21	c) Determinant
	28.10.21	d) Properties of determinant
	29.10.21	Problem of above
	30.10.21	
2nd		1) MATRICES AND DETERMINANTS
	1.11.21	e) Inverse of a matrix
	2.11.21	(second and third order)
	3.11.21	Problem on second order matrix only
	5.11.21	
	6.11.21	
3 <sup>rd</sup>		1) MATRICES AND DETERMINANTS
	8.11.21	f) Cramer's Rule (Question should be on two variables)
	9.11.21	
	10.11.21	g) Solution of simultaneous equations by matrix inverse method (Question should be on two variables)
	11.11.21	Problem of above
	12.11.21 13.11.21	CLASS TEST-1
ath		2) TRIGONOMETRY
4 <sup>th</sup>		a) Trigonometric ratios
	15.11.21	b) Compound angles, multiple and sub-multiple angles (only
	16.11.21 17.11.21	formulae)
	18.11.21	Problem of above
	20.11.21	
5 <sup>th</sup>	22.11.21	2) TRIGONOMETRY

	T	
	23.11.21	c) Define inverse circular functions and its
	24.11.21	
	25.11.21	properties (no derivation)
	26.11.21	Problem of above
	27.11.21	CASSS TEST -2
6 <sup>th</sup>		2) TRIGONOMETRY
	29.11.21	c) Define inverse circular functions and its properties (no
	30.11.21	derivation)
	1.12.21	
	2.12.21	Problem of above
	3.12.21	
	4.12.21	
7 <sup>th</sup>	4.12.21	2) CO ODDINATE CEONAETDY IN TIMO DINAENCIONIC
\		3) CO-ORDINATE GEOMETRY IN TWO DIMENSIONS
	6 12 24	(Straight line)
	6.12.21	a) Introduction of geometry in two dimension
	7.12.21	b) Distance formulae, division formulae, area of a triangle (only
	0.43.34	formulae no derivation)
	8.12.21	c) Define slope of a line, angle between two lines (only F),
		condition of perpendicularity and parallelism.
	9.12.21	d) Different forms of straight lines (only formulae)
		i) One point form
		(ii) two point form
		(iii) slope form
		(iv) intercept form
		(v) Perpendicular form
	10.12.21	Problem of above
	11.12.21	
8 <sup>th</sup>		3) CO-ORDINATE GEOMETRY IN TWO DIMENSIONS
	13.12.21	e) Equation of a line passing through a point and (i) parallel to a
		line (ii) Perpendicular to a line
	14.12.21	f) Equation of a line passing through the intersection of two
		lines
	15.21.21	a) Distance of a control of
		g) Distance of a point from a line
	16.12.21	Problem of above
	17.12.21	
	18.12.21	
9 <sup>th</sup>		4) CIRCLE
_	20.12.21	a) Equation of a circle
	21.12.21	a, =qaa
	22.12.21	(i) centre radius form
	23.12.21	(i) certale radius form
	24.12.21	(ii) general equation of a circle
	24.12.21	Problem of above
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10th   27.12.21   4) CIRCLE   (iii) end point of diameter form   Problem on circle   28.12.21   CLASS TEST-3   S) CO-ORDINATE GEOMETRY IN THREE DIMENSIONS   a) Distance formulae, section formulae, direction ratio, direction cosine, angle between two lines (condition of parallelism and perpendicularity)   1.01.22   Problem of above   1.01.22	
S) CO-ORDINATE GEOMETRY IN THREE DIMENSIONS a) Distance formulae, section formulae, direction ratio, direction cosine, angle between two lines (condition of parallelism and perpendicularity) 1.01.22 Problem of above  11th  S) CO-ORDINATE GEOMETRY IN THREE DIMENSIONS b) Equation of a plane 4.1.22 i) General form angle between two planes 7.1.21 angle between two planes Problem of above  12th  S) CO-ORDINATE GEOMETRY IN THREE DIMENSIONS perpendicular distance of a point from a plane equation plane passing through a point and i) parallel to a plane (ii) perpendicular to a plane Problem of above  15.1.22 QUIZ TEST  13th  G) SPHERE a) Equation of a sphere i) centre radius form ii) general form iii) general form iii) two end points of a diameter form (only formulae problems problems Problem of above	
section formulae, direction ratio, direction cosine, angle between two lines (condition of parallelism and perpendicularity)  1.01.22  Problem of above  11th  3.1.22 4.1.22 5.1.22 6.1.22 7.1.21 8.1.21  10.1.22 11.1.22 11.1.22 12.1.22 13.1.22 14.1.22 13.1.22 14.1.22 15.1.22 15.1.22 16.1.22 17.1.21 18.1.21 18.1.21 19.1.22 19.1.21 19.1.21 19.1.21 19.1.21 19.1.21 19.1.21 20.1.22 21.1	
angle between two lines (condition of parallelism and perpendicularity)  1.01.22 Problem of above  11th S) CO-ORDINATE GEOMETRY IN THREE DIMENSIONS b) Equation of a plane i) General form angle between two planes 7.1.21 angle between two planes Problem of above  12th S) CO-ORDINATE GEOMETRY IN THREE DIMENSIONS perpendicular distance of a point from a plane equation plane passing through a point and i) parallel to a plane (ii) perpendicular to a plane Problem of above  15.1.22 QUIZ TEST  13th G) SPHERE a) Equation of a sphere i) centre radius form ii) yearel form iii) two end points of a diameter form (only formulae problems Problem of above Problem of above	
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3.1.22 4.1.22 5.1.22 5.1.22 6.1.22 7.1.21 8.1.21  10.1.22 11.1.22 12.1.22 13.1.22 14.1.22 13.1.22 14.1.22 13.1.22 14.1.22 13.1.22 14.1.22 15.1.22 17.1.21 18.1.21 18.1.21 18.1.21 18.1.22 18.1.22 18.1.22 18.1.22 18.1.22 18.1.22 18.1.22 18.1.22 19.1.21 19.1.21 20.1.22 21.1	
4.1.22 5.1.22 6.1.22 7.1.21 8.1.21  25	
i) General form angle between two planes Problem of above  12th  10.1.22 perpendicular distance of a point from a plane equation plane passing through a point and i) parallel to a plane (ii) perpendicular to a plane Problem of above  15.1.22 QUIZ TEST  13th  6) SPHERE a) Equation of a sphere i) centre radius form ii) general form iii) two end points of a diameter form (only formulae a problems Problem of above	
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18.1.22 ii) general form 19.1.21 iii) two end points of a diameter form (only formulae a problems 20.1.22 problems 21.1.22 22.1.22 Problem of above	
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22.1.22 Problem of above	
14 <sup>th</sup> 24.1.22	
14	
25.1.22 <b>Revision</b>	
26.1.22 Exam related problem practice	
27.1.22	
28.1.22	
29.1.22	
15 <sup>th</sup> 31.1.22 <b>VST FOR SEMESTER EXAM</b>	

BOOK REFERENCE: ENG. MATHEMATICS-I, KP, MATH BOOK BY NCERT, ELEMENTS OF MATHEMATICS.ODISHA STATE BUREAU