



Bhubanananda Orissa School of Engineering, Cuttack
Department of Mathematics and Science

LESSON PLAN
Academic Session: 2023-24 (winter)

Semester: 1st SEM

Branch: Civil Sec: A

Subject: Engineering Mathematics-I

Prepared by: Goutam Parida

Parida
20/8/2023
H.O.T. (Maths I)

Discipline: Civil Engg. (Sec:A)	Semester:1 st	Name Of The Teaching Faculty: Goutam Parida (Faculty In Mathematics)
Subject: Engineering Mathematics –I	No. Of Days /Per Week Class Alloted:6p (5 lecturer + 1 Tutorial)	Semester From: Date:16/08/2023 to 11/12/2023
Week	Class Days & Dates	Theory Topics
1 st	Day1:16.08.23	a) Introduction & Syllabus discussion
	Day2:17.08.23	<u>UNIT-1:MATRICES AND DETERMINANT (18P)</u> a) Types of matrices
	Day3:18.08.23	b) Algebra of matrices
	Day4:19..08.23	Problem based on previous class
2 nd	Day5:21..08.23	c) Determinant
	Day6:22.08.23	d) Properties of determinant
	Day7:23.08.23	Properties of determinant cont..
	Day8:24.08.23	Problem based on previous class
	Day9:25.08.23	Book exercise practice
	Day10:26.08.23	Tutorial Class:
3 rd	Day11:28.08.23	e) Inverse of a matrix (second and third order)
	Day12:29.08.23	Problem based on previous class
	Day13:31.08.23	f) Cramer's Rule (Question should be on two variables)
	Day14:01.09.23	Problem based on previous class
	Day15:02.09.23	Book exercise practice
4 th	Day16:04.09.23	g) Solution of simultaneous equations by matrix inverse method
	Day17:05.09.23	Problem based on matrix inverse method on two variables
	Day18:07.09.23	Book exercise practice
	Day19:08.09.23	Book exercise practice
	Day20:09.09.23	Book exercise practice
5 th	Day21:11.09.23	Monthly Test-1
	Day22:12.09.23	<u>UNIT-2:TRIGONOMETRY (15P)</u> a) Trigonometrical ratio

	Day23:13.09.23	Trigonometric identities
	Day24:14.09.23	Problem based on previous class
	Day25:15.09.23	Trigonometric expression
	Day26:16.09.23	Tutorial Class
6 th	Day27:18.09.23	Problem based on previous class
	Day28:21.09.23	Important trigonometric function value
	Day29:22.09.23	Problem based on previous class
	Day30:23.09.23	Compound angle formula
7 th	Day31:25.09.23	Problem based on previous class
	Day32:26.09.23	Multiple & sub multiple formula
	Day33:27.09.23	Problem based on previous class
	Day34:28.09.23	c) Define inverse circular functions and its properties (no derivation)
	Day35:30.09.23	c) Define inverse circular functions and its properties (no derivation)
8 th	Day36:03.10.23	Problem based on previous class
	Day37:04.10.23	Book exercise practice
	Day38:05.10.23	Monthly Test-2
	Day39:06.10.23	<u>UNIT-3:CO-ORDINATE GEOMETRY IN TWO DIMENSIONS (STRAIGHT LINE)(13P)</u> a) Introduction of geometry in two dimension b) Distance formulae, division formulae, area of a triangle (only formulae no derivation)
	Day40:07.10.23	Problem based on previous class
9 th	Day41:09.10.23	c) Define slope of a line, angle between two lines (only F),
	Day42:10.10.23	Problem based on previous class
	Day43:11.10.23	condition of perpendicularity and parallelism
	Day44:12.10.23	Problem based on previous class
	Day45:13.10.23	d) Different forms of straight lines (only formulae) i) One point form (ii) two point form

	Day46:14.10.23	Tutorial Class
10 TH	Day47:16.10.23	Problem based on previous class
	Day48:17.10.23	(iii) slope form (iv) intercept form (v) Perpendicular form
	Day49:18.10.23	Problem based on previous class
	Day50:19.10.23	e) Equation of a line passing through a point and (i) parallel to a line (ii) Perpendicular to a line with example
	Day51:20.10.23	f) Equation of a line passing through the intersection of two lines g) Distance of a point from a line with example
11 TH	Day52:30.10.23	Book exercise practice
	Day53:31.10.23	<u>UNIT-4:CIRCLE(7P)</u>
		a) Equation of a circle (i) centre radius form
	Day54:01.11.23	Problem based on previous class
	Day55:02.11.23	(ii) general equation of a circle
	Day56:03.11.23	Problem based on previous class
12 TH	Day57:04.11.23	Tutorial Class
	Day58:06.11.23	(iii) end point of diameter form
	Day59:07.11.23	Problem based on previous class
	Day60:08.11.23	Book exercise practice
	Day61:09.11.23	Monthly Test-3
	Day62:10.11.23	<u>UNIT-5:CO-ORDINATE GEOMETRY IN THREE DIMENSIONS(15P)</u>
		a) Distance formulae, section formulae
13 th	Day63:11.11.23	Tutorial Class
	Day64:13.11.23	Problem based on previous class
	Day65:14.11.23	direction ratio, direction cosine,
	Day66:15.11.23	Problem based on previous class
	Day67:16.11.23	angle between two lines (condition of parallelism and perpendicularity)
	Day68:17.11.23	Problem based on previous class
14 th	Day69:18.11.23	Tutorial Class
	Day70:20.11.23	Problem based on previous class

	Day71:21.11.23	Book exercise practice
	Day72:22.11.23	b) Equation of a plane i) General form
	Day73:23.11.23	Problem based on previous class
	Day74:24.11.23	angle between two planes
	Day75:25.11.23	Tutorial Class
15th	Day76:28.11.23	Problem based on previous class
	Day77:29.11.23	perpendicular distance of a point from a plane, equation of a plane passing through a point and i) parallel to a plane (ii) perpendicular to a plane
	Day78:30.11.23	Problem based on previous class
	Day79:01.12.23	Book Exercise Practice
	Day80:02.12.23	<u>Unit-6:SPHERE(7P)</u> a) Equation of a sphere i) centre radius form
16th	Day81:04.12.23	Problem based on previous class
	Day82:05.12.23	ii) general form
	Day83:06.12.23	Problem based on previous class
	Day84:07.12.23	iii) two end points of a diameter form (only formulae and problems
	Day85:08.12.23	Problem based on previous class
	Day86:09.12.23	Tutorial Class: Book Exercise Practice on sphere
17th	Day87:11.12.23	VST For 1st Sem Exam