Lesson Plan for Engineering Mathematics-I

Discipline	Semester:-1st sem All branches	Name of the Teaching Faculty:- **Satrughna Subudhi**
Subject:- Mathematics	No of days/per week class allotted	Semester from 26/10/2022 to 20/02/2023 No of weeks:- 15
Week	Class Day	Theory Topics
1st	1st	INTRODUCTION TO MATRICES, ORDER OF MATRICES & TYPE OF MATRICES
	2nd	OPERATIONS ON MATRICES
	3rd	INTRODUCTION TO DETERMINANT AND EXPANSION OF DETERMINANTS.
	4th	MINORS AND COFACTORS OF MATRICES AND DETERMINANTS.
	5th	PROPERTIES OF DETERMINANTS
2nd	1st	EXPANSION OF DETERMINANT USING PROPERTIES AND DOUBT CLEARING.
	2nd	EXPANSION OF DETERMINANT USING PROPERTIES
	3rd	INVERSE OF MATRIX (2ND AND 3RD ORDER)
	4th	INVERSE OF MATRIX (2ND AND 3RD ORDER)
	5th	SOLUTION OF SYSTEM OF LINEAR EQUATION BY CRAMER'S RULE.
3rd	1st	SOLUTION OF SYSTEM OF LINEAR EQUATION BY CRAMER'S RULE.
	2nd	DOUBT CLEARING AND PRACTICE PROBLEMS
	3rd	SOLUTION OF SYSTEM OF LINEAR EQUATION BY MATRIX METHOD
	4th	SOLUTION OF SYSTEM OF LINEAR EQUATION BY MATRIX METHOD
	5th	DISCUSSION OF PROBLEMS ON WHOLE TOPIC.
4th	1st	PRACTICE PROBLEMS ON MATRICES AND DETERMINANT

	2nd	PRACTICE PROBLEMS ON MATRICES AND DETERMINANT & ASSIGNMENT CHECKING.
	3rd	REVISION ON MATRICES AND DETERMINANT & ASSIGNMENT CHECKING.
	4th	INTRODUCTION TO TRIGONOMETRY
	5th	TRIGONOMETRICAL RATIOS OF CERTAIN ANGLES
5th	1st	PROBLEMS BASED ON T-RATIOS AND COMPOUND ANGLES
	2nd	PROBLEMS BASED ON COMPOUND ANGLES
	3rd	PROBLEMS ON SUB-MULTIPLE ANGLES
	4th	PRACTICE PROBLEMS BASED ON SUB-MULTIPLE ANGLES AND DOUBT CLEARING
	5th	PROBLEM BASED ON COMPOUND AND SUBMULTIPLE OF ANGLES
6th	1st	PROBLEM PRACTICE AND ASSIGNMENT CHECKING
	2nd	PRCTICE PROBLEMS AND CHECKING ASSIGNMENTS
	3rd	DEFINE INVERSE CIRCULAR FUNCTIONS
	4th	PROPERTIES OF INVERSE CIRCULAR FUNCTIONS
	5th	PROBLEMS ON INVERSE TRIGONOMETRIC FUNCTIONS AND ASSIGNMENT CHECK. DOUBT CLEARING.
7th	1st	REVISION ON TRIGONOMETRY AND INVERSE TRIGONOMETRIC FUNCTIONS. ASSIGNMENT CHECK.
	2nd	CLASS TEST ON TRIGNOMETRY AND DETERMINANT AND MATRICES. DOUBT CLEARING ON THESE TOPICS
	3rd	INTRODUCTION OF GEOMETRY IN TWO DIMENSION. IDEA ABOUT POINTS AND QUADRANTS
	4th	DISTANCE FORMULAE, SECTION FORMULAE,AREA OF A TRIANGLE AND CONDITION OF COLLINEARITY. PROBLEMS ON DISTANCE FORMULA.
	5th	PROBLEMS BASED ON DISTANCE FORMULA, AREA OF TRIANGLE AND COLLINEARITY.,PROBLEM ON SECTION FORMULA , CENTROID OF A TRIANGLE AND MIDPOINT FORMULA . PROBLEMS BASE D ON CENTROID AND MIDPOINT.
8th	1st	PROBLEM SOLVING AND DOUBT CLEARING ON DISTANCE AND SECTION FORMULA.
	2nd	ANGLE OF INCLINATION OF A LINE, SLOPE OF A LINE,

		CONDITION OF PARALLELISM AND PERPENDICULARITY . PROBLEMS ON THEM.
	3rd	ANGLE BETWEEN TWO LINES. PRACTICING PROBLEMS AND CHECKING ASSIGNMENTS.
	4th	LOCUS , EQUATION OF LOCUS , INTERCEPTS, EQUATION OF LINE
	5th	EQUATION OF LINE IN DIFFERENT FORMS. PROBLEMS OF DIFFERENT FORMS
9th	1st	GENERAL EQUATION OF LINE AND DETERMINATION OF SLOPE, INTERCEPTS FROM IT. CONDITION OF PARALLELISM AND PERPENDICULARITY FROM GENERAL EQUATION OF LINE. PROBLEMS ON IT.
	2nd	PRACTICING PROBLEMS AND CHECKING ASSIGNMENTS.
	3rd	RELATIONSHIP BETWEEN PARALLEL AND PERPENDICULAR LINES. EQUATION OF A LINE PARALLEL AND PERPENDICULAR TO A LINE PASSING THROUGH A POINT. INTERSECTION OF TWO LINES.
	4th	EQUATION OF A LINE PASSSING THROUGH INTERSECTION OF TWO LINES AND i) PASSING THROUGH A POINT. ii) PARALLEL TO ANOTHER LINE iii) PERPENDICULAR TO ANOTHER LINE.
	5th	PERPENDICULAR DISTANCE OF A POINT FROM A LINE AND DISTANCE BETWEEN TWO PARALLEL LINES. DETERMINATION OF FOOT OF PERPENDICULAR FROM A POINT TO A LINE.
10th	1st	DISTANCE OF A POINT FROM A LINE MESURED PARALLEL TO ANOTHER LINE. PRACTICE PROBLEMS ON 2-D.
	2nd	REVISION OF 2-D AND CHECK ASSSIGNMENTS.
	3rd	PRACTICE PROBLEMS AND CHECK ASSIGNMENT OF2-D.
	4th	INTRODUCTION TO CIRCLE, EQUATION OF A CIRCLE WITH GIVEN CENTRE AND RADIUS. SOLVING PROBLEMS BASED ON DEFINITION.
	5th	EQUATION OF CIRCLE WHEN END POINTS OF THE DIAMETER IS GIVEN. GENERAL EQUATION OF CIRCLE. DETERMINATION OF CENTRE AND RADIUS FROM GENERAL EQUATION OF CIRCLE.
11th	1st	EQUATION OF CIRCLE PASSING THROUGH 3 POINTS AND EQUATION OF CIRCLE PASSING THROUGH TWO POINTS AND CENTRE LIES ON A GIVEN LINE.
	2nd	PROBLEMS DICUSSION ON CIRCLE TOPIC AND ASSSIGNMENT CHE CK.
	3rd	REVISION OF CIRCLE TOPIC AND ASSIGNMENT CHECK.
	4th	CLASS TEST ON 2-D AND DOUBT CLEARING.

	5th	INTRODUCTION TO THREE DIMENSION. REPRESENTATION OF A POINT. DIVISION OF SPACE INTO OCTANTS.
12th	1st	DISTANCE FORMULAE,SECTION FORMULAE AND COLLINEARITY OF THREE POINTS. PROBLEMS ON THESE TOPICS.
	2nd	DIRECTION COSINES AND DIRECTION RATIOS OF A LINE. RELATIONSHIP BETWEEN THEM. PROPERTIES ABOUT DCS AND DRS. CONDITION OF PARALLELISM AND PERPENDICULARITY. ANGLE BETWEEN TWO LINES.
	3rd	PROJECTION OF A LINE SEGMENT ON A LINE. DISCUSSION OF VARIOUS PROBLEMS ON ABOVE STUDY.
	4th	PRACTICE PROBLEMS AND ASSIGNMENT CHECKING.
	5th	DOUBT CLEARING AND ASSIGNMENT CHECKING.
13th	1st	INTRODUCTION TO PLANE, EQUATION OF A PLANE IN DIFFERENT FORM. PROBLEMS ON IT.
	2nd	ANGLE BETWEEN TWO PLANES AND PERPENDICULAR DISTACE OF A POINT FROM A PLANE. PROBLEMS ON IT.
	3rd	PROBLEMS ON PLANE.
	4th	EQUATION OF A PLANE PASSING THROUGH APOINT AND i) PARALLEL TO ANOTHER PLANE ii) PERPENDICULAR TO ANOTHER PLANE. PROBLEMS ON IT.
	5th	PROBLEMS ON PLANE
15th	1st	DOUBT CLEARING CLASS AND ASSIGNMENT CHECKING
	2nd	INTRODUCTION TO SPHERE ,EQUATION OF A SPHERE WITH GIVEN CENTRE AND RADIUS. PROBLEM ON IT.
	3rd	GENERAL EQUATION OF A SPHERE AND DETERMINATION OF CENTRE AND RADIUS FROM IT. EQUATION OF A SPHERE WITH END POINTS OF DIAMETER GIVEN.
	4th	PROBLEMS BASED ON SPHERE
	5th	SPHERE PASSING THROUGH 4 POINTS. PROBLEMS ON SPHERE.