



## **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**

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

	23.11.21 24.11.21 25.11.21 26.11.21 27.11.21	c) Define inverse circular functions and its properties (no derivation)  Problem of above  <b>CASSS TEST -2</b>
6 <sup>th</sup>	29.11.21 30.11.21 1.12.21 2.12.21 3.12.21 4.12.21	<b>2) TRIGONOMETRY</b>  c) Define inverse circular functions and its properties (no derivation)  Problem of above
7 <sup>th</sup>	6.12.21 7.12.21  8.12.21 9.12.21  10.12.21 11.12.21	<b>3) CO-ORDINATE GEOMETRY IN TWO DIMENSIONS</b> (Straight line) a) Introduction of geometry in two dimension b) Distance formulae, division formulae, area of a triangle (only formulae no derivation) c) Define slope of a line, angle between two lines (only F), condition of perpendicularity and parallelism. 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 Problem of above
8 <sup>th</sup>	13.12.21  14.12.21 15.12.21 16.12.21 17.12.21 18.12.21	<b>3) CO-ORDINATE GEOMETRY IN TWO DIMENSIONS</b> e) Equation of a line passing through a point and (i) parallel to a line (ii) Perpendicular to a line  f) Equation of a line passing through the intersection of two lines  g) Distance of a point from a line  Problem of above
9 <sup>th</sup>	20.12.21 21.12.21 22.12.21 23.12.21 24.12.21	<b>4) CIRCLE</b> a) Equation of a circle  (i) centre radius form  (ii) general equation of a circle Problem of above

10 <sup>th</sup>	27.12.21  28.12.21  29.12.21  30.12.21  1.01.22	<b>4) CIRCLE</b> (iii) end point of diameter form Problem on circle  <b>CLASS TEST-3</b> <b>5) CO-ORDINATE GEOMETRY IN THREE DIMENSIONS</b>  a) Distance formulae,  section formulae, direction ratio, direction cosine,  angle between two lines (condition of parallelism and perpendicularity)  Problem of above
11 <sup>th</sup>	3.1.22 4.1.22 5.1.22 6.1.22 7.1.21 8.1.21	<b>5) CO-ORDINATE GEOMETRY IN THREE DIMENSIONS</b>  b) Equation of a plane  i) General form  angle between two planes  Problem of above
12 <sup>th</sup>	10.1.22 11.1.22 12.1.22 13.1.22 14.1.22  15.1.22	<b>5) CO-ORDINATE GEOMETRY IN THREE DIMENSIONS</b>  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  Problem of above  <b>QUIZ TEST</b>
13 <sup>th</sup>	17.1.22 18.1.22 19.1.21 20.1.22 21.1.22 22.1.22	<b>6) SPHERE</b> a) Equation of a sphere i) centre radius form ii) general form iii) two end points of a diameter form (only formulae and problems)  Problem of above
14 <sup>th</sup>	24.1.22 25.1.22 26.1.22 27.1.22 28.1.22 29.1.22	<b>Revision</b> <b>Exam related problem practice</b>
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