

AICTE

PLOT NO. 1293, MAHATAPALLA, BAJAPUR,KHURDA Session: 2023-2024

Course Name: DIPLOMA

Theory/Practical: Theory Section : A Semester : 1 Branch Name: CIVIL

Subject Name: TH 3 : Engineering Mathematics-I Teacher Name: SUCHITRA SRICHANDAN

Credit " External Evaluation(Marked) " Internal Evaluation(Marked) "

Text Books:

0111		
SI.No		Text Books
1	Elements of mathematics vol- 1&2	

Reference books:

0111	
SI.No	Reference books
1	Mathematics part-1 & part-2 text book for class-XII, NCERT publication

Course Outcomes

Course Outcomes:

SI.No

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
1	1	2	TRIGONOMETRY RATIO	Cos 2	•
2	2	2	CONCEPT OF RIGHT ANGLE TRIANGLE AND PHYTHAGORAS THEOREM	Cos 2	
3	3	2	TRIGONOMETRIC FUNCTIONS WITH STANDARD ANGEL	Cos 2	
4	4	2	PROBLEM ON TRIGONOMETRIC RATIO OF SOME SPECIFIC ANGLE	Cos 2	
5	5	2	SIGN OF T -RATIOS AND SOME EXAMPLES	Cos 2	
6	6	2	TRIGONOMETRY RATIO OF ? INTERMS OF (?)	Cos 2	A CAMPAGE AND SOCIETY OF THE SOCIETY
7	7	2	TRIGONOMETRIC RATIO OF COMPOUND ANGLE	Cos 2	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
8	8	2	SOME EXAMPLES OF TRIGONOMETRIC COMPOUND ANGLE	Cos 2	
9	9	2	TRIGONOMETRIC RATIO OF 2A IN TERMS OF A (ONLY FORMULLA) AND SOME EXAMPLES	Cos 2	
10	10	2	TRIGONOMETRIC RATIO OF 3A IN TERMS OF A (ONLY FORMULLA) AND SOME EXAMPLES	Cos 2	
. 11	11	2	TRIGONOMETRIC RATIO OF ANGLE A IN TERMS OF A/2 (ONLY FORMULLA) AND SOME EXAMPLES	Cos 2	
12	12	2	INVERSE CIRCULAR FUNCTION	Cos 2	
13	13	2	PROPERTY OF INVERSE CIRCULAR FUNCTION AND SOME EXAMPLE	Cos 2	
14	14	2	PROBLEM ON INVERSE CIRCULAR FUNCTION	Cos 2	
15	15	1	BASIC CONCEPT ,MATRICES, ORDER,TYPES	Cos 1	
16	16	1	MORE TYPES	Cos 1	
17	17	1	ADDITION OF MATRICES AND PRODUCT OF MATRIX OF A SCALAR	Cos 1	
18	18	1	PRODUCT OF TWO MATRICES	Cos 1	
19	19	1	THE MULTIPLICATIVE INVERSE OF A SQUARE MATRIX	Cos 1	
20	20	1 2	TRANSPOSE AND ORTHOGONAL MATRIX AND MINOR	Cos 1	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
21	21	1	COFACTOR AND ADJOINT OF A MATRIX	Cos 1	
22	22	1	INVERSE OF A MATRIX	Cos 1	
23	23	1	SOLUTION OF SIMULTANEOUS EQUATION (MATRIX METHOD)	Cos 1	
24	24	1	SOLUTION OF SIMULTANEOUS EQUATION (MATRIX METHOD)	Cos 1	
25	25	1	INTRODUCTION OF DETERMINANTS AND DETERMINANT OF SECOND ORDER AND THIRD ORDER	Cos 1	
26	26	1	MINOR AND COFACTOR OF DETERMINANTS	Cos 1	
27	27	1	PROPERTIES OF DETERMINANTS AND SOME PROBLEMS	Cos 1	
28	28	1	CRAMER'S RULE	Cos 1	
29	29	1	EXAMPLE OF CRAMER'S RULE	Cos 1	
30	30	1	PRODUCT OF TWO DETERMINANTS	Cos 1	
31	31	1	EXAMPLE OF PRODUCT OF TWO DETERMINANTS	Cos 1	
32	32	3	INTRODUCTON OF GEOMETRY IN TWO DIMENSION	Cos 3	
33	33	3	DISTANCE FORMULLA AND DIVISION FORMULLA AND SOME EXAMPLE	Cos 3	
34	34		AREA OF TRIANGLE (FORMULLA) AND SOME EXAMPLE	Cos 3	
35	35	3	SLOPE OF A LINE AND ANGLE BETWEEN TWO	Cos 3	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
20			LINES		
36	36	3	CONDITION OF PERENDICULARITY AND PARALLEISM	Cos 3	
37	37	3 -	DIFFERENT FORMS OF STRIGHT LINES	Cos 3	
38	38	3	ONE POINT FORMS AND TWO POINT FORMS	Cos 3	
39	39	3	SLOPE FORMS AND INTERCEPT FORMS	Cos 3	
40	40	3	PERPENDICULAR FORMS	Cos 3	
41	41	3	EQUATION OF LINE PASSING THROUGH THE INTERSECTION OF TWO LINES	Cos 3	
42	42	4	DISTANCE OF A POINT FROM A LINE	Cos 4	
43	43	4	INTRODUCTION OF A CIRCLE AND CENTER RADIUS FORM	Cos 4	
44	44	4	PROBLEM ON CENTER AND RADIUS OF CIRCLE	Cos 4	
45	45	4	GENERAL EQUATION OF A CIRCLE	Cos 4	
46	46	4	END POINT OF DIAMETER FORM	Cos 4	
47	47	5	INTRODUCTION OF SPACE AND THREE DIMENSIONS	Cos 5	** Carobinations a region of
48	48	5	DISTANCE FORMULAE AND SECTION FORMULAE	Cos 5	
49	49	5	DIRECTION RATIO AND DIRECTION COSINE	Cos 5	
50	50	5	ANGLE BETWEEN TWO LINE	Cos 5	
			(PARALLELISM)		
51	51	5	ANGLE BETWEEN TWO LINE (PERPEN DICULARITY)	Cos 5	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
52	52	5	INTRODUCTION OF A PLANE AND GENERAL FORM OF EQUATION OF PLANE	Cos 5	
53	53	5	ANGLE BETWEEN TWO PLANES	Cos 5	
54	54	5	PERPENDICULAR DISTANCE OF A POINT FROM PLANE	Cos 5	
55	55	6	EQUATION OF A PLANE PASSING THROUGH A POINT PARALLEL TO A PLANE	Cos 6	
56	56	6	EQUATION OF A PLANE PASSING THROUGH A POINT PERPENDICULAR TO A PLANE	Cos 6	
57	57	6	INTRODUCTION ON SPHERE AND EQUATION OF A SPHERE	Cos 6	
58	58	6	CENTER AND RADIUS FORM	Cos 6	
59	59	6	GENERAL FORM OF SPHERE	Cos 6	
60	60	6	SOME PROBLEM ON SPHERE	Cos 6	

Suchitra Syichandan Subject Teacher 124

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PLOT NO. 1293, MAHATAPALLA, BAJAPUR,KHURDA

Session: 2023-2024

Course Name: DIPLOMA

Subject Name: TH 2A: Engineering

Section: A Semester: 1 Branch Name: CIVIL

Theory/Practical: Theory

Teacher Name: NAYAN MEHER

Credit "External Evaluation(Marked) '80' Internal Evaluation(Marked) '20'

Text Books:

SI.No	Text Books
1	Engineering Physics for Diploma by Ranjan Kumar Bhuyan, PHI Private Ltd. New Delhi
2	Text book of physics for XI (part -I, Part-II, N.C.E.R.T
3	Text book of physics for XII (part -I, Part-II), N.C.E.R.T

Reference books:

SI.No	Reference books
1	Optical fibre communications by GERD KEISER, MGH publication .
2	Electronic communication Systems, by George kennedy, Tata McGraw Hill
3 An Introduction to Fiber Optics. By Ajoy K. Ghatak, K. Thyagarajan, Cambridg	

SI.No Course Outcomes		
1	Estimate errors in measurement of physical quantities.	
Students will be able to Apply laws of motion in various applications and Calculate		
2 effects of gravitational force on planets. D		
Comprehend concept of Heat, Temperature and and their effects on Solids, Acqui		
3	knowledge on properties of light.	
4 Apply Coulomb's law to calculate electrostatics force, electric field and electr		
5 Use basic principles of light, X-rays, Laser and Fibre optics in related engineering		

SL No.	L No. Lecture Module/Unit No.		Topic To Be Taught	Cos	Reference Material
			Definition of fundamental and		
			derived units, systems of units (FPS,		
1	1	<u> </u>	CGS, MKS and SI units)	Cos 1	
			Definition of dimension and		
			Dimensional formulae of physical		
2	2		quantities	Cos 1	

3			Dimensional equations and		
4	3	1	Principle of homogeneity	Cos 1	
5		ll	Scalar and Vector quantities	Cos 1	
		ll	Resolution of Vectors	Cos 1	
6 6 111		III	Vector multiplication	Cos 2	
			Concept of Rest and Motion,		
_	_		Displacement, Speed, Velocity,		
7	7	III	Acceleration & Force	Cos 2	
			Equations of Motion under		
			GravityCircular motion: Angular		
			displacement, Angular velocity and		
8	8	III	Angular acceleration	Cos 2	
			Circular motion: Angular		
			displacement, Angular velocity and		
9	9	III	Angular accelerationLinear &	Cos 2	
			Relation between Linear & Angular		
10	10	111	acceleration	Cos 2	
			Projectile, Expression for Equation		
11	11	III	of Trajectory	Cos 2	
12	12	III	Time of Flight, Maximum Height	Cos 2	
			Horizontal Range for a projectile		
			fired at an angle, Condition for		
13	13	IV	maximum Horizontal Range	Cos 2	
			Definition, Formula & SI units of		
14	14	IV	WORK AND FORCE	Cos 2	
15	15	IV	Static, dynamic & Limiting Friction	Cos 2	
16	16	IV	Laws of Limiting Friction	Cos 2	
17	17	IV	Coefficient of Friction with	Cos 2	
18	18	V	Useful Methods to reduce friction	Cos 2	
19	19	V	Newton's Laws of Gravitation	Cos 2	
			Universal Gravitational Constant		
20	20	V	(G), Acceleration due to gravity (g)	Cos 2	
			Definition of mass and weight&		
21	21	V	Relation between g and G.	Cos 2	
22	22	V.	Variation of g with altitude and	Cos 2	
23	23	V	Kepler's Laws of Planetary	Cos 2	
24	24	VI	Simple Harmonic Motion	Cos 3	
			Expression (Formula/Equation) for		
			displacement, velocity, acceleration		
25	25	VI	of a body/ particle in SHM	Cos 3	
26	26	VI	Wave motion Introduction	Cos 3	
			Amplitude, Wavelength, Frequency,		
27	27	VI	Time Period	Cos 3	
			Derivation of Relation between		
			Velocity, Frequency and		
28	28	VI	Wavelength of a wave	Cos 3	
29	29	VI	Introduction to Ultrasonic	Cos 3	
		VI	introduction to Oltrasonic	C03 J	

		1	Heat and Temperature, Units of	Ι	
30	30	VII		Cos 3	
-	30	VII	Heat,Specific heat Change of state (concept), Latent	C03 3	
			Heat (concept, definition, unit,		
31 31		VII		Cos 3	
32	32		dimension and simple numerical)	Cos 3	
32	32	VII	Thermal Expansion, Expansion of		
			Coefficient of linear, superficial and		
33	22		cubical expansions of Solids â€"	Coc 2	
34	33	VII	Definition & Units.	Cos 3	
35	34	VII	Relation between α, β & Ï'	Cos 3	
33	35	VII	Work and Heat - Concept &	Cos 3	
3.0			Joule's Mechanical Equivalent of		
36	36	VII	Heat , First Law of Thermodynamics	Cos 3	
27			Reflection & Refraction, Laws of		
37	37	VIII	reflection and refraction	Cos 3	
			Refractive index, Critical Angle and		
38	38	VIII	Total internal reflection	Cos 3	
			Refraction through Prism (Ray		
39	39	VIII	Diagram & Formula only)	Cos 3	
			Fiber Optics â€" Definition,		
40	40	VIII	Properties & Applications.	Cos 3	11
			Electrostatics, Statement &		
			Explanation of Coulombs laws,		
41	41	IX	Definition of Unit charge.	Cos 4	
			Absolute & Relative Permittivity	1	
- 1			(Îμ), Electric potential and Electric		
42	42	IX	Potential difference	Cos 4	
			Electric field, Electric field intensity		
43	43	IX	(E) , Capacitance	Cos 4	
			Series and Parallel combination of		
			Capacitors, Magnet, Properties of a		
44	44	lX -	magnet.	Cos 4	
			Series and Parallel combination of		
			Capacitors, Magnet, Properties of a		
45	45	IX	magnet	Cos 4	
46	46	IX	Magnetic lines of force	Cos 4	
40			Magnetic Flux (î¦) & Magnetic Flux		
47	47	IX	Density (B)	Cos 4	
47	47	1//	Electric Current , Ohm's law and		
40	40	х	its applications	Cos 4	
48	48	^	Series and Parallel combination of	CU3 4	
	46	v		Cos 4	
49	49	X	resistors	Cos 4	
			Kirchhoff's laws (Statement &	Can 4	
50	50	X	Explanation with diagram).	Cos 4	
			Application of Kirchhoff's laws		
51	51	X	to Wheatstone bridge	Cos 4	

17.50	47.8; 474.0				
		11,00	Balanced condition of		4
			Wheatstone's Bridge â€″		
52	52	X	Condition of Balance (Equation).	Cos 4	
			Electromagnetism, Force acting on		
			a current carrying conductor placed		
53	53	XI	in a uniform magnetic field	Cos 4	
			Fleming's Left Hand		
54	54	ΧI	Rule,Fleming's Right Hand Rule	Cos 4	
			Faraday's Laws of		
55	55	XI	Electromagnetic Induction	Cos 4	
56	56	XI	Lenz's Law C		
			Comparison between Fleming's		
			Right Hand Rule and Fleming's		
57	57	XI	Left Hand Rule.	Cos 5	
58	58	XII	LASER & laser beam, Principle of	Cos 5	
59	59	XII	Properties & Applications of LASER	Cos 5	
			Wireless Transmission â€" Ground		
60	60	XII	Waves, Sky Waves, Space Waves	Cos 5	

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AICTE

PLOT NO. 1293, MAHATAPALLA, BAJAPUR,KHURDA Session: 2023-2024

Course Name: DIPLOMA Theory/Practical: Theory

Section : A Semester : 1 Branch Name: CIVIL

Subject Name: TH 1A : Communicative English Teacher Name: SUBHALAXMI SAMANTARA

Credit "External Evaluation(Marked) '80' Internal Evaluation(Marked) '20'

Text Books:

SI.No	
	Text Books
1	Invitation to English, Book-1, (for +2 students), CSHE (2016 reprint), Odisha
2	Invitation to English, Book-2, (for +2 students), CSHE (2016 reprint), Odisha
3	Invitation to English, Book-3, (for +2 students), CSHE (2016 reprint), Odisha
4	Invitation to English Body (6) 12 students), CSHE (2016 reprint), Odisha
	Invitation to English, Book-4, (for +2 students), CSHE (2016 reprint), Odisha
5	Communication Skills, Sanjay Kumar and Puspalata, Oxford University Press

Reference books:

SI.No	Reference books
1	Invitation to English, Book-2, (for +2 students), CSHE (2016 reprint), Odisha
2	Communication Skills, Sanjay Kumar and Puspalata, Oxford University Press

SI.No	Course Outcomes
1	KNOWLEDGE ABOUT WHOLE LITERURE APPRECIATION SUCH AS NOTE MAKING ,SUMMERIZING ETC AND STORY AND POEM
2	USES OF SYNONYMS , ANTONYMS & SINGLE WORD SUBSTITUTE
3	TENSES, COUNTABLE AND UNCOUNTABLE NOUN ,MODELS, VOICE CHANGE ,ARTICLES & DETERMINERS, SUBJECT - VERB AGREEMENT
4	PARAGRAPH WRITING, NOTICE, AGENDA, REPORT WRITING, LETTER, APPLICATION
5	INTRODUCTION TO COMMUNICATION , PROFFESIONAL COMMUNICATION

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
1	1	1	Skimming the gist	Cos 1	
2	2	1	Skimming the gist	Cos 1	
3	3	1	Skimming the gist	Cos 1	
4	4	1	Scanning for necessary information	Cos 1	
5	5	1	Close reading for inference and evaluation	Cos 1	
6	6	1	Main idea and supporting points	Cos 1	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
7	7	1	Main idea and supporting points	Cos 1	
8	8	1	Guessing the meaning of un-familiar words	Cos 1	
9	9	1	Guessing the meaning of un-familiar words	Cos 1	
10	10	1	Note- making	Cos 1	
11	11	1	Note- making	Cos 1	
12	12	1	Summarizing	Cos 1	
13	13	1	Summarizing	Cos 1	
14	14	1	Supplying a suitable title	Cos 1	
15	15	1	Standing Up For Yourself By Yevgeny Yevtushenko	Cos 1	
16	16	1	The Magic Of Teamwork By Sam Pitroda	Cos 1	
17	17	1	The Magic Of Teamwork By Sam Pitroda	Cos 1	
18	18	1	Inchcape Rock By Robert Southey	Cos 1	
19	19	1	To My True Friend By Elizabeth Pinard	Cos 1	
20	20	1	To My True Friend By Elizabeth Pinard	Cos 1	
21	21	2	synonyms	Cos 2	
22	22	2	antonyms	Cos 2	
23	23	2	Same word used in different situations in different meaning	Cos 2	
24	24	2	Same word used in different situations in different meaning	Cos 2	
25	25	2	Single word substitute	Cos 2	
26	26	3	Countable an Uncountable Noun	Cos 3	
27	27	3	Articles and Determiners	Cos 3	
28	28	3	Modal Verbs	Cos 3	
29	29	3	Tenses	Cos 3	
30	30	3	Tenses	Cos 3	
31	31	3	Tenses	Cos 3	

SL No.	Lecture	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
32	No.				
33	32	3	Voice-change	Cos 3	
	33	4	Subject-verb Agreement	Cos 4	
34	34	4	Paragraph writing	Cos 4	
35	35	4	Meaning	Cos 4	
36	36	4	Features of Paragraph Writing	Cos 4	
37	37	4	Developing Ideas into Paragraphs	Cos 4	
38	38	4	Notice	Cos 4	
39	39	4	Agenda	Cos 4	
40	40	4	Report writing	Cos 4	
41	41	4	Writing personal letter	Cos 4	
42	42	4	Letter to the Principal, Librarian	Cos 4	
43	43	4	Letter toHead of the Deptt, and Hostel Superintenden	Cos 4	
44	44	4	Writing Business letters	Cos 4	
45	45	4	Layout of a Business Letter	Cos 4	
46	46	4	Letter of Enquiry, Placing an Order, Execution of an Order, Complaint, Cancellation of an order	Cos 4	
47	47	4	Letter of Enquiry, Placing an Order, Execution of an Order, Complaint, Cancellation of an order	Cos 4	
48	48	4	Job application and C.V.	Cos 4	
49	49	5	Job application and C.V.	Cos 5	
50	50	5	Meaning, Definition and concept of communication	Cos 5	
51	51	5	Good Communication and Bad Communication	Cos 5	
52	52	5	Communication model	Cos 5	
53	53	5	Process of communication and	Cos 5	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
			factors responsible for it		
54	54	5	Meaning of professional communication	Cos 5	
55	55	5	Types of professional communication	Cos 5	
56	56	5	Formal or Systematic Communication Informal communication	Cos 5	
57	57	5	Meaning of nonverbal Communication	Cos 5	
58	58	5	Different areas of Non- verbal Communication	Cos 5	
59	59	5	Kinesics or Body Language & Proxemics or Spatial Language	Cos 5	
60	60	5	Language of Signs and Symbols	Cos 5	

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Subject Teacher

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PLOT NO. 1293, MAHATAPALLA, BAJAPUR,KHURDA

Session: 2023-2024

Course Name: DIPLOMA

Subject Name: TH 3 : Engineering

Section: B Semester: 1 Branch Name: ELECTRICAL

Theory/Practical: Theory

Teacher Name: SUCHITRA SRICHANDAN

Credit " External Evaluation(Marked) " Internal Evaluation(Marked) "

Text Books:

SI.No Text Books		Text Books
1 Elements of mathematics vol- 1&2		Elements of mathematics vol- 1&2

Reference books:

SI.No Reference books	
1	Mathematics part-1 & part-2 text book for class-XII, NCERT publication

SI.No	Course Outcomes
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SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught		Reference
1	1	2	TRIGONOMETRY RATIO	Cos 2	
			CONCEPT OF RIGHT ANGLE TRIANGLE		
2	2	2	AND PHYTHAGORAS THEOREM	Cos 2	
			TRIGONOMETRIC FUNCTIONS WITH		
3	3	2	STANDARD ANGEL	Cos 2	
			PROBLEM ON TRIGONOMETRIC RATIO		
4	4	2	OF SOME SPECIFIC ANGLE	Cos 2	
			SIGN OF T â€"RATIOS AND SOME		
5	5	2	EXAMPLES	Cos 2	
			TRIGONOMETRY RATIO OF Î, INTERMS		
6	6	2	OF (θ)	Cos 2	
			TRIGONOMETRIC RATIO OF		
7	7	2	COMPOUND ANGLE	Cos 2	
			SOME EXAMPLES OF TRIGONOMETRIC		
8	8	2	COMPOUND ANGLE	Cos 2	
			TRIGONOMETRIC RATIO OF 2A IN		
	8		TERMS OF A (ONLY FORMULLA) AND		
9	9	2	SOME EXAMPLES	Cos 2	

TRIGONOMETRIC RATIO OF 3A IN TERMS OF A (ONLY FORMULLA) AND SOME EXAMPLES Cos 2	
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TRIGONOMETRIC RATIO OF ANGLE A IN TERMS OF A/2 (ONLY FORMULLA) 11 11 2 AND SOME EXAMPLES COS 2 12 12 2 INVERSE CIRCULAR FUNCTION COS 2 PROPERTY OF INVERSE CIRCULAR PROBLEM ON INVERSE CIRCULAR PROBLEM ON INVERSE CIRCULAR FUNCTION AND SOME EXAMPLE COS 2 PROBLEM ON INVERSE CIRCULAR FUNCTION COS 2 BASIC CONCEPT ,MATRICES, ORDER,TYPES COS 1 16 16 1 MORE TYPES ‹. COS 1 ADDITION OF MATRICES AND PRODUCT OF MATRIX OF A SCALAR COS 1 18 18 1 PRODUCT OF TWO MATRICES COS 1 THE MULTIPLICATIVE INVERSE OF A SQUARE MATRIX COS 1 TRANSPOSE AND ORTHOGONAL MATRIX AND MINOR COS 1 20 20 1 MATRIX AND MINOR COS 1 21 21 1 COFACTOR AND ADJOINT OF A COS 1 SOLUTION OF SIMULTANEOUS EQUATION (MATRIX METHOD) COS 1	
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23 23 1 EQUATION (MATRIX METHOD) Cos 1	
COLUTION OF CONTURE AND COLUMN	
SOLUTION OF SIMULTANEOUS	
24 24 1 EQUATION (MATRIX METHOD) Cos 1	
INTRODUCTION OF DETERMINANTS	
AND DETERMINANT OF SECOND	
25 25 1 ORDER AND THIRD ORDER Cos 1	
MINOR AND COFACTOR OF	
26 26 1 DETERMINANTS Cos 1	
PROPERTIES OF DETERMINANTS AND	
27 27 1 SOME PROBLEMS Cos 1	
28 28 1 CRAMER'S RULE Cos 1	interrigence.
29 29 1 EXAMPLE OF CRAMER'S RULE Cos 1	
30 30 1 PRODUCT OF TWO DETERMINANTS Cos 1	
EXAMPLE OF PRODUCT OF TWO	
31 31 1 DETERMINANTS Cos 1	
INTRODUCTON OF GEOMETRY IN TWO	
32 32 DIMENSION Cos 3	
DISTANCE FORMULLA AND DIVISION	
33 3 FORMULLA AND SOME EXAMPLE Cos 3	
AREA OF TRIANGLE (FORMULLA) AND	
34 34 3 SOME EXAMPLE Cos 3	
SLOPE OF A LINE AND ANGLE	
35 3 BETWEEN TWO LINES Cos 3	

26			CONDITION OF PERENDICULARITY		
36	36	3	AND PARALLEISM	Cos 3	
37	37	3	DIFFERENT FORMS OF STRIGHT LINES	Cos 3	
_			ONE POINT FORMS AND TWO POINT		
38	38	3	FORMS	Cos 3	
39	39	3	SLOPE FORMS AND INTERCEPT FORMS	Cos 3	
40	40	3	PERPENDICULAR FORMS	Cos 3	
			EQUATION OF LINE PASSING		
41	41	3	THROUGH THE INTERSECTION OF	Cos 3	
42	42	4	DISTANCE OF A POINT FROM A LINE	Cos 4	
			INTRODUCTION OF A CIRCLE AND		
43	43	4	CENTER RADIUS FORM	Cos 4	
			PROBLEM ON CENTER AND RADIUS OF		
44	44	4	CIRCLE	Cos 4	
45	45	4	GENERAL EQUATION OF A CIRCLE	Cos 4	
46	46	4	END POINT OF DIAMETER FORM	Cos 4	
			INTRODUCTION OF SPACE AND THREE		
47	47	5	DIMENSIONS	Cos 5	
			DISTANCE FORMULAE AND SECTION		
48	48	5	FORMULAE	Cos 5	
			DIRECTION RATIO AND DIRECTION		
49	49	5	COSINE	Cos 5	
			ANGLE BETWEEN TWO LINE		
50	50	5	(PARALLELISM)	Cos 5	
			ANGLE BETWEEN TWO LINE		
51	51	5	(PERPENDICULARITY)	Cos 5	
			INTRODUCTION OF A PLANE AND		
			GENERAL FORM OF EQUATION OF		
52	52	5	PLANE	Cos 5	
53	53	5	ANGLE BETWEEN TWO PLANES	Cos 5	
			PERPENDICULAR DISTANCE OF A		
54	54	5	POINT FROM PLANE	Cos 5	
			EQUATION OF A PLANE PASSING		
			THROUGH A POINT PARALLEL TO A		
55	55	6	PLANE	Cos 6	
			EQUATION OF A PLANE PASSING		
			THROUGH A POINT PERPENDICULAR		
56	56	6	TO A PLANE	Cos 6	
- 50		_	INTRODUCTION ON SPHERE AND		
57	57	6	EQUATION OF A SPHERE	Cos 6	
58	58	6	CENTER AND RADIUS FORM	Cos 6	
59	59	6	GENERAL FORM OF SPHERE	Cos 6	
60	60	6	SOME PROBLEM ON SPHERE	Cos 6	
			JOHNE I HODELINI ON OF HEILE	1 223 0 1	

Suchita Smichardan ect Teacher 162/62/24

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AICTE

PLOT NO. 1293, MAHATAPALLA, BAJAPUR,KHURDA Session: 2023-2024

Course Name: DIPLOMA Theory/Practical: Theory

Section : B Semester : 1 Branch Name: ELECTRICAL
Subject Name: TH 2A: Engineering Physics

Teacher Name: NAYAN MEHER

Credit " External Evaluation(Marked) '80' Internal Evaluation(Marked) '20'

Text Books:

SI.No	Text Books
1	Engineering Physics for Diploma by Ranjan Kumar Bhuyan, PHI Private Ltd. New Delhi
2	Text book of physics for XI (part -I, Part-II, N.C.E.R.T
3	Text book of physics for XII (part -I, Part-II), N.C.E.R.T

Reference books:

SI.No	Reference books
1	Optical fibre communications by GERD KEISER, MGH publication .
2	Electronic communication Systems, by George kennedy, Tata McGraw Hill
3	An Introduction to Fiber Optics. By Ajoy K. Ghatak, K. Thyagarajan, Cambridge University Press.

SI.No	Course Outcomes
1	Estimate errors in measurement of physical quantities.
	Students will be able to Apply laws of motion in various applications and Calculate effects of gravitational force on planets. D
	Comprehend concept of Heat, Temperature and and their effects on Solids, Acquire knowledge on properties of light.
4	Apply Coulomb's law to calculate electrostatics force, electric field and electric potential.
5	Use basic principles of light, X-rays, Laser and Fibre optics in related engineering problems.

SL No.	Lecture	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
	No.				
1	1 1	1	Definition of	Cos 1	
			fundamental and		
			derived units, systems		
			of units (FPS, CGS,		
	,		MKS and SI units)		
2	2		Definition of	Cos 1	
			dimension and		¥
			Dimensional formulae		
	и		of physical quantities		
3	3	!	Dimensional	Cos 1	
			equations and		
			Principle of		
			homogeneity		

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Link
4	4	11	Scalar and Vector quantities	Cos 1	
5	5	II	Resolution of Vectors	Cos 1	
6	6	III	Vector multiplication	Cos 2	
7	7	111	Concept of Rest and Motion, Displacement, Speed, Velocity, Acceleration & Force		A
8	8	III	Equations of Motion under GravityCircular motion: Angular displacement, Angular velocity and Angular acceleration	Cos 2	
9	9	III	Circular motion: Angular displacement, Angular velocity and Angular accelerationLinear & Angular velocity	Cos 2	
10	10	III	Relation between Linear & Angular acceleration	Cos 2	
11	11	III	Projectile, Expression for Equation of Trajectory	Cos 2	
12	12	III	Time of Flight, Maximum Height	Cos 2	
13	13	IV	Horizontal Range for a projectile fired at an angle, Condition for maximum Horizontal Range	Cos 2	
14	14	IV	Definition, Formula & SI units of WORK AND FORCE	Cos 2	
15	15	IV	Static, dynamic & Limiting Friction	Cos 2	
16	16	IV	Laws of Limiting Friction	Cos 2	
17	17	IV	Coefficient of Friction with problems	Cos 2	
18	18	V	Useful Methods to reduce friction	Cos 2	
19	19	V	Newton's Laws of Gravitation	Cos 2	
20	20	V	Universal	Cos 2	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
			Gravitational Constant (G), Acceleration due to gravity (g)		
21	21	V	Definition of mass and weight& Relation between g and G.	Cos 2	
22	22	V	Variation of g with altitude and depth	Cos 2	
23	23	V	Kepler's Laws of Planetary Motion	Cos 2	
24	24	VI	Simple Harmonic Motion	Cos 3	
25	25	VI	Expression (Formula/Equation) for displacement, velocity, acceleration of a body/ particle in SHM	Cos 3	
26	26	VI	Wave motion Introduction	Cos 3	
27	27	VI	Amplitude, Wavelength, Frequency, Time Period	Cos 3	
28	28	VI	Derivation of Relation between Velocity, Frequency and Wavelength of a wave	Cos 3	
29	29	VI	Introduction to Ultrasonic	Cos 3	
30	30	VII	Heat and Temperature, Units of Heat,Specific heat	Cos 3	
31	31	VII	Change of state (concept), Latent Heat (concept, definition, unit, dimension and simple numerical)	Cos 3	
32	32	VII	Thermal Expansion, Expansion of Solids	Cos 3	
33	33	VII	Coefficient of linear, superficial and cubical expansions of Solids – Definition & Units.	1	
34	34	VII	Relation between ?, ? & ?	Cos 3	
35	35	VII	Work and Heat -	Cos 3	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
			Concept & Relation		
36	36	VII	Joule's Mechanical Equivalent of Heat , First Law of Thermodynamics	Cos 3	
37	37	VIII	Reflection & Refraction, Laws of reflection and refraction	Cos 3	
38	38	VIII	Refractive index, Critical Angle and Total internal reflection	Cos 3	
39	39	VIII	Refraction through Prism (Ray Diagram & Formula only)	Cos 3	
40	40	VIII	Fiber Optics – Definition, Properties & Applications.	Cos 3	
41	41	IX	Electrostatics, Statement & Explanation of Coulombs laws, Definition of Unit charge.	Cos 4	
42	42	IX	Absolute & Relative Permittivity (?), Electric potential and Electric Potential difference	Cos 4	
43	43	IX	Electric field, Electric field intensity (E), Capacitance	Cos 4	
44	44	IX	Series and Parallel combination of Capacitors, Magnet, Properties of a magnet.	Cos 4	
45	45	IX	Series and Parallel combination of Capacitors, Magnet, Properties of a	003 7	
		14 4 4 4	magnet	Con 4	
46	46	IX	Magnetic lines of force	Cos 4	
47	47	IX	Magnetic Flux (?) & Magnetic Flux Density (B)	1	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
48	48	X	Electric Current , Ohm's law and its applications	Cos 4	
49	49	Х	Series and Parallel combination of resistors	Cos 4	
50	50	X	Kirchhoff's laws (Statement & Explanation with diagram).	Cos 4	
51	51	Х	Application of Kirchhoff's laws to Wheatstone bridge	Cos 4	
52	52	X	Balanced condition of Wheatstone's Bridge - Condition of Balance (Equation).	Cos 4	
53	53	ΧI	Electromagnetism, Force acting on a current carrying conductor placed in a uniform magnetic field	Cos 4	
54	54	ΧI	Fleming's Left Hand Rule,Fleming's Right Hand Rule	Cos 4	
55	55	ΧI	Faraday's Laws of Electromagnetic Induction	Cos 4	
56	56	XI	Lenz's Law	Cos 4	
57	57	XI	Comparison between Fleming's Right Hand Rule and Fleming's Left Hand Rule.	Cos 5	
58	58	XII	LASER & laser beam, Principle of LASER	Cos 5	
59	59	XII	Properties & Applications of LASER	Cos 5	
60	60	XII	Wireless Transmission – Ground Waves, Sky Waves, Space Waves	Cos 5	

Suppled Teacher

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AICTE

PLOT NO. 1293, MAHATAPALLA, BAJAPUR,KHURDA Session: 2023-2024

Course Name: DIPLOMA Theory/Practical: Theory

Section : B Semester : 1 Branch Name: ELECTRICAL

Subject Name: TH 1A: Communicative English

Teacher Name: SUPRAVA RATH

Credit "External Evaluation(Marked) '80' Internal Evaluation(Marked) '20'

Text Books:

SI.No	Text Books
1	Invitation to English, Book-1, (for +2 students), CSHE (2016 reprint), Odisha
2	Invitation to English, Book-2, (for +2 students), CSHE (2016 reprint), Odisha
3	Invitation to English, Book-3, (for +2 students), CSHE (2016 reprint), Odisha
4	Invitation to English, Book-4, (for +2 students), CSHE (2016 reprint), Odisha
5	Communication Skills, Sanjay Kumar and Puspalata, Oxford University Press

Reference books:

SI.No	Reference books						
1	Invitation to English, Book-2, (for +2 students), CSHE (2016 reprint), Odisha						
2	Communication Skills, Sanjay Kumar and Puspalata, Oxford University Press						

SI.No	Course Outcomes
1	KNOWLEDGE ABOUT WHOLE LITERURE APPRECIATION SUCH AS NOTE MAKING
	,SUMMERIZING ETC AND STORY AND POEM
2	USES OF SYNONYMS , ANTONYMS & SINGLE WORD SUBSTITUTE
3	TENSES, COUNTABLE AND UNCOUNTABLE NOUN ,MODELS, VOICE CHANGE ,ARTICLES &
	DETERMINERS, SUBJECT - VERB AGREEMENT
4	PARAGRAPH WRITING, NOTICE , AGENDA, REPORT WRITING , LETTER, APPLICATION
5	INTRODUCTION TO COMMUNICATION , PROFFESIONAL COMMUNICATION

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
1	1	1	Skimming the gist	Cos 1	
2	2	1	Skimming the gist	Cos 1	
3	3	1	Skimming the gist	Cos 1	
4	4	1	Scanning for necessary information	Cos 1	
5	5	1	Close reading for inference and evaluation	Cos 1	
6	6	1	Main idea and supporting points	Cos 1	

No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
7	7	1	Main idea and supporting points	Cos 1	
8	8	1	Guessing the meaning of un-familiar words	Cos 1	
9	9	1	Guessing the meaning of un-familiar words	Cos 1	
10	10	1	Note- making	Cos 1	
11	11	1	Note- making	Cos 1	
12	12	1	Summarizing	Cos 1	
13	13	1	Summarizing	Cos 1	
14	14	1	Supplying a suitable title	Cos 1	
15	15	1	Supplying a suitable title	Cos 1	
16	16	1	Standing Up For Yourself By Yevgeny Yevtushenko	Cos 1	
17	17	1	The Magic Of Teamwork By Sam Pitroda	Cos 1	
18	18	1	The Magic Of Teamwork By Sam Pitroda	Cos 1	
19	19	1	Inchcape Rock By Robert Southey	Cos 1	
20	20	1	To My True Friend By Elizabeth Pinard	Cos 1	
21	21	2	synonyms	Cos 2	
22	22	2	antonyms	Cos 2	
23	23	2	Same word used in different situations in different meaning	Cos 2	
24	24	2	Same word used in different situations in different meaning	Cos 2	
25	25	2	Single word substitute	Cos 2	
26	26	3	Countable an Uncountable Noun	Cos 3	
27	27	3	Articles and Determiners	Cos 3	
28	28	3	Modal Verbs	Cos 3	
29	29	3	Tenses	Cos 3	
30	30	3	Tenses	Cos 3	
00	31	3	Tenses	Cos 3	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
32	32	3	Voice-change	Cos 3	
33	33	3	Subject-verb Agreement	Cos 3	
34	34	4	Paragraph writing	Cos 4	The state of the s
35	35	4	Meaning	Cos 4	
36	36	4	Features of Paragraph Writing	Cos 4	
37	37	4	Developing Ideas into Paragraphs	Cos 4	
38	38	4	Notice	Cos 4	
39	39	4	Agenda	Cos 4	
40	40	4	Report writing	Cos 4	
41	41	4	Writing personal letter	Cos 4	
42	42	4	Letter to the Principal, Librarian	Cos 4	
43	43	4	Letter toHead of the Deptt, and Hostel Superintenden	Cos 4	
44	44	4	Writing Business letters	Cos 4	
45	45	4	Layout of a Business Letter	Cos 4	
46	46	4	Letter of Enquiry, Placing an Order, Execution of an Order, Complaint, Cancellation of an order	Cos 4	
47	47	4	Job application and C.V.	Cos 4	
48	48	4	Job application and C.V.	Cos 4	
49	49	5	Meaning, Definition and concept of communication	Cos 5	
50	50	5	Good Communication and Bad Communication	Cos 5	
51	51	5	Communication model	Cos 5	
52	52	5	Process of	Cos 5	
,			communication and factors responsible for it		
53	53	5	Meaning of professional communication	Cos 5	, , , ,
54	54	5	Types of professional	Cos 5	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
			communication		
55	55	5	Formal or Systematic Communication	Cos 5	
56	56	5	Informal communication	Cos 5	
57	57	5	Meaning of nonverbal Communication	Cos 5	
58	58	5	Different areas of Non- verbal Communication	Cos 5	
59	59	5	Kinesics or Body Language & Proxemics or Spatial Language	Cos 5	
60	60	5	Language of Signs and Symbols	Cos 5	

Subject Teacher

HOD



AICTE

PLOT NO. 1293, MAHATAPALLA, BAJAPUR,KHURDA Session: 2023-2024

Course Name: DIPLOMA Theory/Practical: Theory

Section : C Semester : 1 Branch Name: COMPUTER SCIENCE
Subject Name: TH 3: Engineering Mathematics-I
Teacher Name: GYANA RANJAN RATH

Credit "External Evaluation(Marked) '80' Internal Evaluation(Marked) '20'

Text Books:

SI.No	Text Books
1	Elements of Mathematics _ Vol 1 & 2 (Odisha State Bureau of Text Book preparation & Production)

Reference books:

SI.No	Reference books
1	Mathematics Part- I & Part- II- Textbook for Class XII, NCERT Publication

SI.No	Course Outcomes
1	This subject helps the students to develop logical thinking which is useful in comprehending the principles of all to the subjec
2	Analytical and systematic approach towards any problem is developed through learning of this subject.
3	Mathematics being a versatile subject can be used at every stage of human life.

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
1	1	2	TRIGONOMETRY RATIO	Cos 2	
2	2	2	CONCEPT OF RIGHT ANGLE TRIANGLE AND PHYTHAGORAS THEOREM	Cos 2	
3	3	2	TRIGONOMETRIC FUNCTIONS WITH STANDARD ANGEL	Cos 2	
4	4	2	PROBLEM ON TRIGONOMETRIC RATIO OF SOME SPECIFIC ANGLE	Cos 2	
5	5	2	SIGN OF T -RATIOS AND SOME EXAMPLES	Cos 2	
6	6	2	TRIGONOMETRY RATIO OF ?	Cos 2	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
			INTERMS OF (?)		
7	7	2	TRIGONOMETRIC RATIO OF	Cos 2	
0			COMPOUND ANGLE		CONTRACTOR OF THE SECOND SECON
8	8	2	SOME EXAMPLES OF TRIGONOMETRIC	Cos 2	
			COMPOUND ANGLE		
9	9	2	TRIGONOMETRIC RATIO OF 2A IN TERMS OF A (ONLY	Cos 2	
			FORMULLA) AND SOME EXAMPLES		
10	10	2	TRIGONOMETRIC	Cos 2	
			RATIO OF 3A IN		
			TERMS OF A (ONLY		
			FORMULLA) AND		
			SOME EXAMPLES		
11	11	2	TRIGONOMETRIC	Cos 2	
			RATIO OF ANGLE A		
			IN TERMS OF A/2		
			(ONLY FORMULLA)		
			AND SOME		
			EXAMPLES		
12	12	2	INVERSE CIRCULAR FUNCTION	Cos 2	
13	13	2	PROPERTY OF	Cos 2	
10			INVERSE CIRCULAR		
			FUNCTION AND		
			SOME EXAMPLE		
14	14	2	PROBLEM ON	Cos 2	
			INVERSE CIRCULAR		
			FUNCTION		
15	15	1	BASIC CONCEPT	Cos 1	
			,MATRICES,		
			ORDER,TYPES		
16	16	1	MORE TYPES MATRICES	Cos 1	
17	17	1	ADDITION OF	Cos 1	
			MATRICES AND		
			PRODUCT OF		
	range and the second of the se		MATRIX OF A SCALAR		
18	18	1	PRODUCT OF TWO MATRICES	Cos 1	
19	19	1 1 "	THE MULTIPLICATIVE	Cos 1	
			INVERSE OF A		

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
			SQUARE MATRIX		
20	20	1	TRANSPOSE AND ORTHOGONAL MATRIX AND MINOR	Cos 1	er ommeren eine eine eine eine eine eine eine
21	21	1	COFACTOR AND ADJOINT OF A MATRIX	Cos 1	
22	22	1	INVERSE OF A MATRIX	Cos 1	
23	23	1	SOLUTION OF SIMULTANEOUS EQUATION (MATRIX METHOD	Cos 1	
24	24	1	SOLUTION OF SIMULTANEOUS EQUATION (MATRIX METHOD	Cos 1	
25	25	1	INTRODUCTION OF DETERMINANTS AND DETERMINANT OF SECOND ORDER AND THIRD ORDER	Cos 1	
26	26	1	MINOR AND COFACTOR OF DETERMINANTS	Cos 1	
27	27	1	PROPERTIES OF DETERMINANTS AND SOME PROBLEMS	Cos 1	
28	28	1	CRAMER'S RULE	Cos 1	
29	29	1	EXAMPLE OF CRAMER'S RULE	Cos 1	
30	30	. 1	PRODUCT OF TWO DETERMINANTS	Cos 1	
31	31	1	EXAMPLE OF PRODUCT OF TWO DETERMINANTS	Cos 1	
32	32	3	INTRODUCTON OF GEOMETRY IN TWO DIMENSION	Cos 3	
33	33	3	DISTANCE FORMULLA AND DIVISION FORMULLA AND	Cos 3	
34	34	3	SOME EXAMPLE AREA OF TRIANGLE (FORMULLA) AND	Cos 3	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
			SOME EXAMPLE		
35	35	3	SLOPE OF A LINE AND ANGLE BETWEEN TWO	Cos 3	
			LINES	Cos 3	
36	36	3	CONDITION OF PERENDICULARITY AND PARALLEISM	Cos 3	
37	37	3	DIFFERENT FORMS OF STRIGHT LINES ONE POINT FORMS AND TWO POINT FORMS	Cos 3	
38	38	3	SLOPE FORMS AND INTERCEPT FORMS	Cos 3	
39	39	3	PERPENDICULAR FORMS	Cos 3	
40	40	3	EQUATION OF LINE PASSING THROUGH THE INTERSECTION OF TWO LINES	Cos 3	
41	41	3	DISTANCE OF A POINT FROM A LINE	Cos 3	
42	42	4	INTRODUCTION OF A CIRCLE AND CENTER RADIUS FORM	Cos 4	
43	43	4	PROBLEM ON CENTER AND RADIUS OF CIRCLE	Cos 4	
44	44	4	GENERAL EQUATION OF A CIRCLE	Cos 4	
45	45	4	END POINT OF DIAMETER FORM	Cos 4	
46	46	5	INTRODUCTION OF SPACE AND THREE DIMENSIONS	Cos 5	
47	47	5	DISTANCE FORMULAE AND SECTION FORMULAE	Cos 5	
48	48	5	DIRECTION RATIO AND DIRECTION COSINE	Cos 5	
49	49	5	ANGLE BETWEEN TWO LINE	Cos 5	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
			(PARALLELISM)		
50	50	5	ANGLE BETWEEN TWO LINE (PERPEN DICULARITY)	Cos 5	****
51	51	5	INTRODUCTION OF A PLANE AND GENERAL FORM OF EQUATION OF PLANE	Cos 5	
52	52	5	ANGLE BETWEEN TWO PLANES	Cos 5	
53	53	5	PERPENDICULAR DISTANCE OF A POINT FROM PLANE	Cos 5	
54	54	6	EQUATION OF A PLANE PASSING THROUGH A POINT PARALLEL TO A PLANE	Cos 6	
55	55	6	EQUATION OF A PLANE PASSING THROUGH A POINT PERPENDICULAR TO A PLANE	Cos 6	
56	56	6	SOME EXAMPLE ON EQUATION OF A PLANE PASSING THROUGH A POINT	Cos 6	
57	57	6	INTRODUCTION ON SPHERE AND EQUATION OF A SPHERE	Cos 6	
58	58	6	CENTER AND RADIUS FORM	Cos 6	
59	59	6	GENERAL FORM OF SPHERE	Cos 6	
60	60	6	SOME PROBLEM ON SPHERE	Cos 6	

Subject Teacher

HOD



AICTE

PLOT NO. 1293, MAHATAPALLA, BAJAPUR,KHURDA Session: 2023-2024

Course Name: DIPLOMA Theory/Practical: Theory

Section : C Semester : 1 Branch Name: COMPUTER SCIENCE Subject Name: TH 2B : Engineering Chemistry

Teacher Name: SANGITA PANI

Credit '3' External Evaluation(Marked) '100' Internal Evaluation(Marked)

'20'

Text Books:

SI.No	Text Books
1	Text book of intermediate Chemistry Part 1 & part 2 by Nanda, Das, Sharma, Kalyani Publishers
	Engg. Chemistry by B.K Sharma Krishna Prakashan Media Pvt. Ltd.

Reference books:

SI.No	Reference books
1	Engg.Chemistry by Y.R. SHARMA, Krishna Prakashan Media Pvt.Ltd
2	Engg.Chemistry for Diploma -Dr. R K Mohapatra, PHI Publication, New Delhi.
3	Engg.Chemistry - Jain & Jain, Dhanpat Roy and Sons.

SI.No	Course Outcomes				
1	The students will be able to acquire knowledge in structure, bonding ,hybridization concept of acid and bases of different comp				
2	Understand various uses and processes of Metallurgy and composition of Alloys				
3	To Analyze and Apply the basic concepts of Hydrocarbons , IUPAC nomenclature and uses of aromatic compounds				
4	Students will be able To Develop innovative methods for water treatment and uses of Polymers and Bio fertilizers				

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
1	1	1	INTRODUCTION TO CHEMISTRY	Cos 1	
2	2	1	FUNDAMENTAL PARTICLES	Cos 1	
3	3	1	RUTHERFORD'S ATOMIC MODEL	Cos 1	
4	4	1	ATOMIC MASS AND MASS NUMBER	Cos 1	-
5	5	1	PROPERTIES OF ISOTOPES, ISOBARS, ISOTONES	Cos 1	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
6	6	1	BOHR'S ATOMIC MODEL	Cos 1	
7	7	1	AUFBAU'S PRINCIPLE, HUND'S RULE, ELECTRONIC CONFIGURATION	Cos 1	
8	8	1	IONIC BOND , COVALENT BOND,	Cos 1	
9	9	1	CO-ORDINATE BOND	Cos 1	
10	10	1	CONCEPT OF ACID BASE THEORY	Cos 1	
11	11	1	ARRHENIOUS THEORY FOR ACID AND BASES	Cos 1	
12	12	1	BRONSTED-LOWRY THEORY FOR ACID AND BASES	Cos 1	
13	13	1	LEWIS THEORY FOR ACID AND BASES	Cos 1	
14	14	1	DEFINITION OF SALT, TYPES OF SALT	Cos 1	
15	15	1	ATOMIC WEIGHT, M OLECULARWEIGHT, EQUIVALENT WEIGHT	Cos 1	
16	16	1	NORMALITY, MOLARITY, MOLALITY WITH PROBLEMS	Cos 1	
17	17	1	IMPORTANCE OF P H IN INDUSTRY	Cos 1	
18	18	1	INTRODUCTION OF ELECTROCHEMISTR	Cos 1	
19	19	1	ELECTROLYSIS WITH EXAMPLE OF NaCI	Cos 1	
20	20	1	FARADAY'S LAW, ELECTROPLATING	Cos 1	
21	21	1	DEFINITION OF CORROSION, TYPES OF CORROSI ON,PROTECTION OF CORROSION	Cos 1	
22	22	1	WATERLINE	Cos 1	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
			CORROSION, MECHANISM OF RUSTING OF IRON ONLY		
23	23	2	INTRODUCTION OF METALLURGY	Cos 2	
24	24	2	ORE DRESSING,	Cos 2	
25	25	2	CONCENTRATION, OXIDATION	Cos 2	
26	26	2	REDUCTION, REFINING OF METAL	Cos 2	
27	27	2	DEFINITION OF ALLOY , TYPES OF ALLOYS	Cos 2	
28	28	2	COMPOSITION AND USES OF BRASS,BR ONZE,ALNICO,DURA LUMIN	Cos 2	
29	29	2	ALNICO,	Cos 2	
30	30	2	DURALUMIN	Cos 2	
31	31	3	BASIC CONCEPT OF ORGANIC CHEMISTRY	Cos 3	
32	32	3	SATURATED HYDROCARBON	Cos 3	
33	33	3	UNSATURATED HYDROCARBON	Cos 3	
34	34	3	ALIPHATIC HYDROCARBON	Cos 3	
35	35	3	NOMENCLATURE OF ALKANE	Cos 3	
36	36	3	NOMENCLATURE OF ALKENE	Cos 3	
37	37	3	NOMENCLATURE OF ALKYNE	Cos 3	
38	38	3	NOMENCLATURE OF ALKYL HALIDE	Cos 3	
39	39	3	NOMENCLATURE OF ALCOHOL	Cos 3	
40	40	3	USES OF SOME COMMON AROMATIC COMPOUNDS	Cos 3	
41	41	4	SOURCE OF WATER,SOFT AND HARD WATER	Cos 4	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
42	42	4	TYPES OF HARDNESS	Cos 4	
43	43	4	REMOVAL OF HARDNESS BY LIME SODA METHOD	Cos 4	
44	44	4	ADVANTAGES OF HOT LIME PROCESS	Cos 4	
45	45	4	ADVANTAGES OF COLD LIME PROCESS	Cos 4	
46	46	4	ORGANIC ION EXCHANGE METHOD	Cos 4	
47	47	4	DEFINITION AND TYPES OF LUBRICANT	Cos 4	
48	48	4	SPECIFIC USES OF LUBRICANT	Cos 4	
49	49	4	DEFINITION AND CLASSIFICATION OF FUELS	Cos 4	
50	50	4	CALORIEFIC VALUE	Cos 4	
51	51	4	SOLID FUEL	Cos 4	
52	52	4	LIQUID FUEL	Cos 4	
53	53	4	GASEOUS FUEL(WATER AND PRODUCER GAS,CNG,LPG)	Cos 4	
54	54	4	DEFINITION AND TYPES OF POYMER	Cos 4	
55	55	4	DIFERRENCE BETWEEN THERMOPLASTIC AND THERMOSETTING POLYMERS	Cos 4	
56	56	4	COMPOSITION AND USES OF PVC AND BAKELITEUSES OF	Cos 4	
57	57	4	VULCANIZED RUBBER	Cos 4	
58	58	4	EXAMPLE AND USES OF PESTICIDES AND INSECTICIDES	Cos 4	
59	59	4	EXAMPLE AND USES OF	Cos 4	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
			HERBICIDES AND FUNGICIDES		
60	60	4	USES AND	Cos 4	× 0 0
		e a de gr	EXAMPLES OF BIO		
	and the state of t		FERTILIZERS	a succession according to the major	Alternative of the second of the second control of the second cont

Sangita Pawi Subject Teacher

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AICTE

PLOT NO. 1293, MAHATAPALLA, BAJAPUR,KHURDA Session: 2022-2023

Course Name: DIPLOMA Theory/Practical: Theory

> Section: D Semester: 1

Branch Name: MECHANICAL

Subject Name: TH 3: Engineering Mathematics-I

Teacher Name: GYANA RANJAN RATH

Credit " External Evaluation(Marked) '80' Internal Evaluation(Marked) '20'

Text Books:

SI.No			Text Books
1	Elements of Mathematics	_ Vol	1 & 2 (Odisha State Bureau of Text Book preparation & Production)

Reference books:

SI.No	Reference books
1	Mathematics Part- I & Part- II- Textbook for Class XII, NCERT Publication

SI.No	Course Outcomes				
1	This subject helps the students to develop logical thinking which is useful in comprehending the				
	principles of all to the subjec				
2	Analytical and systematic approach towards any problem is developed through learning of this				
	subject.				
3	Mathematics being a versatile subject can be used at every stage of human life.				

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
1	1	2	TRIGONOMETRY RATIO	Cos 2	
2	2	2	CONCEPT OF RIGHT ANGLE TRIANGLE	Cos 2	
			AND PHYTHAGORAS THEOREM		
3	3	2	TRIGONOMETRIC FUNCTIONS WITH STANDARD ANGEL	Cos 2	
4	4	2	PROBLEM ON TRIGONOMETRIC RATIO OF SOME SPECIFIC ANGLE	Cos 2	
5	5	2	SIGN OF T -RATIOS AND SOME EXAMPLES	Cos 2	
6	6	2	TRIGONOMETRY RATIO OF ?	Cos 2	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
			INTERMS OF (?)		
7	7	2	TRIGONOMETRIC RATIO OF COMPOUND ANGLE	Cos 2	
8	8	2	SOME EXAMPLES OF TRIGONOMETRIC COMPOUND ANGLE	Cos 2	
9	9	2	TRIGONOMETRIC RATIO OF 2A IN TERMS OF A (ONLY FORMULLA) AND SOME EXAMPLES	Cos 2	
10	10	2	TRIGONOMETRIC RATIO OF 3A IN TERMS OF A (ONLY FORMULLA) AND SOME EXAMPLES	Cos 2	
11	11	2	TRIGONOMETRIC RATIO OF ANGLE A IN TERMS OF A/2 (ONLY FORMULLA) AND SOME EXAMPLES	Cos 2	
12	12	2	INVERSE CIRCULAR FUNCTION	Cos 2	
13	13	2	PROPERTY OF INVERSE CIRCULAR FUNCTION AND SOME EXAMPLE	Cos 2	
14	14	2	PROBLEM ON INVERSE CIRCULAR FUNCTION	Cos 2	
15	15	1	BASIC CONCEPT ,MATRICES, ORDER,TYPES	Cos 1	
16	16	1	MORE TYPES	Cos 1	
17	17	1	ADDITION OF MATRICES AND PRODUCT OF MATRIX OF A SCALAR	Cos 1	
18	18	1	PRODUCT OF TWO MATRICES	Cos 1	
19	19	1	THE MULTIPLICATIVE INVERSE OF A SQUARE MATRIX	Cos 1	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
20	20	1	TRANSPOSE AND ORTHOGONAL MATRIX AND MINOR	Cos 1	
21	21	1 .	COFACTOR AND ADJOINT OF A MATRIX	Cos 1	
22	22	1	INVERSE OF A MATRIX	Cos 1	
23	23	1	SOLUTION OF SIMULTANEOUS EQUATION (MATRIX METHOD)	Cos 1	
24	24	1	SOLUTION OF SIMULTANEOUS EQUATION (MATRIX METHOD)	Cos 1	
25	25	1	INTRODUCTION OF DETERMINANTS AND DETERMINANT OF SECOND ORDER AND THIRD ORDER	Cos 1	
26	26	1	MINOR AND COFACTOR OF DETERMINANTS	Cos 1	
27	27	1	PROPERTIES OF DETERMINANTS AND SOME PROBLEMS	Cos 1	
28	28	1	CRAMER'S RULE	Cos 1	
29	29	1 .	EXAMPLE OF CRAMER'S RULE	Cos 1	
30	30	1	PRODUCT OF TWO DETERMINANTS	Cos 1	ALAN DE LA COLLEGA DE LA COLLE
31	31	1	EXAMPLE OF PRODUCT OF TWO DETERMINANTS	Cos 1	
32	32	3	INTRODUCTON OF GEOMETRY IN TWO DIMENSION	Cos 3	
33	33	3	DISTANCE	Cos 3	
			FORMULLA AND DIVISION FORMULLA AND SOME EXAMPLE		
34	34	3	AREA OF TRIANGLE (FORMULLA) AND SOME EXAMPLE	Cos 3	

L No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
35	35	3	SLOPE OF A LINE AND ANGLE BETWEEN TWO LINES	Cos 3	
36	36	3	CONDITION OF PERENDICULARITY AND PARALLEISM	Cos 3	
37	37	3	DIFFERENT FORMS OF STRIGHT LINES	Cos 3	
38	38	3	ONE POINT FORMS AND TWO POINT FORMS	Cos 3	
39	39	3	SLOPE FORMS AND INTERCEPT FORMS	Cos 3	
40	40	3	PERPENDICULAR FORMS	Cos 3	
41	41	3	EQUATION OF LINE PASSING THROUGH THE INTERSECTION OF TWO LINES	Cos 3	
42	42	3	DISTANCE OF A POINT FROM A LINE	Cos 3	
43	43	4	INTRODUCTION OF A CIRCLE AND CENTER RADIUS FORM	Cos 4	
44	44	4	PROBLEM ON CENTER AND RADIUS OF CIRCLE	Cos 4	
45	45	4	GENERAL EQUATION OF A CIRCLE	Cos 4	
46	46	4	END POINT OF DIAMETER FORM	Cos 4	
47	47	5	INTRODUCTION OF SPACE AND THREE DIMENSIONS	Cos 5	
48	48	5	DISTANCE FORMULAE AND SECTION FORMULAE	Cos 5	
49	49	5	DIRECTION RATIO AND DIRECTION COSINE	Cos 5	
50	50	5	ANGLE BETWEEN TWO LINE (PARALLELISM)	Cos 5	

			T. J. T. Do Tought	Cos	Reference Material Links
SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught		
51	51	5	ANGLE BETWEEN TWO LINE (PERPEN DICULARITY)	Cos 5	
52	52	5	INTRODUCTION OF A PLANE AND GENERAL FORM OF EQUATION OF PLANE	Cos 5	
53	53	5	ANGLE BETWEEN TWO PLANES	Cos 5	
54	54	5	PERPENDICULAR DISTANCE OF A POINT FROM PLANE	Cos 5	
55	55	6	EQUATION OF A PLANE PASSING THROUGH A POINT PARALLEL TO A PLANE	Cos 6	
56	56	6	EQUATION OF A PLANE PASSING THROUGH A POINT PERPENDICULAR TO A PLANE	Cos 6	
57	57	6	INTRODUCTION ON SPHERE AND EQUATION OF A SPHERE	Cos 6	
58	58	6	CENTER AND RADIUS FORM	Cos 6	
59	59	6	GENERAL FORM OF SPHERE	Cos 6	
60	60	6	SOME PROBLEM ON SPHERE	Cos 6	

Subject Teacher



CAPITAL ENGINEERING COLLEGE AICTE

PLOT NO. 1293, MAHATAPALLA, BAJAPUR, KHURDA

Session: 2023-2024

Course Name: DIPLOMA

Subject Name: TH 2B : Engineering

Section: D Semester: 1 **Branch Name: MECHANICAL**

Theory/Practical: Theory

Teacher Name: SUMAN JENA

Credit "External Evaluation(Marked) '80' Internal Evaluation(Marked) '20'

Text Books:

SI.No	Text Books
1	Text book of intermediate Chemistry Part 1 & part 2 by Nanda, Das, Sharma, Kalyani
2	Engg. Chemistry by B.K Sharma Krishna Prakashan Media Pvt. Ltd.

Reference books:

SI.No	Reference books
1	Engineering Chemistry-Jain & Jain, Dhanpat Roy & Sons

Course Outcomes:

SI.No	Course Outcomes
	After Completion of the course the students will be able to Apply the basic concepts
1	of electrochemistry ,Acid base salt
2	Understand various uses and processes of Metallurgy and composition of Alloys
	To Analyze and Apply the basic concepts of Hydrocarbons , IUPAC nomenclature and
3	uses of aromatic compounds
	Students will be able To Develop innovative methods for water treatment and uses of
4	Polymers and Bio fertilizers

SL No.	Lecture	Module/Unit No.	Topic To Be Taught	Cos	Reference Material
1	1	Α	Atomic Structure	Cos 1	
2	2	Α	Atomic Mass, Isotopes	Cos 1	
3	3	Α	Electronic configuration	Cos 1	
4	4	Α	Bohr, Aufbau's principle, Hund's rule	Cos 1	
5	5	Α	Chemical Bonding	Cos 1	
6	6	Α	Acid Base Theory	Cos 1	
7	7	Α	Salt	Cos 1	
8	8	Α	Solutions	Cos 1	
9	9	Α	pH Solution	Cos 1	
10	10	Α	Electrochemistry	Cos 1	

11	11	Α	Faraday's 1st and 2nd	Cos 1
12	12	A	Electrolysis	Cos 1
13	13	A	Corrosion	Cos 1
14	14	A	Protection from Corriosion	Cos 1
15	15	Α	Physical Chemistry Revision	Cos 1
16	16	B	Metallurgy	Cos 2
17	17	В	Ores and Minerals	Cos 2
18	18	В	Extraction of Metals	Cos 2
19	19	В	Extraction of Metals	Cos 2
20	20	В	Oxidation,Reduction	Cos 2
21	21	В	Alloys	Cos 2
22	22	B	Alloys	Cos 2
23	23	В	Inorganic Chemistry Revision	Cos 2
24	24	C	Organic chemistry	Cos 3
25	25	C	Hydrocarbons	Cos 3
26	26	C	Aliphatic & Aromatic hydrocarbons	Cos 3
27	27	C	Huckle's rule	Cos 3
28	28	С	IUPAC Nomenclature	Cos 3
29	29	С	IUPAC Nomenclature	Cos 3
30	30	C	IUPAC Nomenclature	Cos 3
31	31	C	Bond line notation	Cos 3
32	32	C	Bond line notation	Cos 3
33	33	C	Aromatic compounds	Cos 3
34	34	C	Uses	Cos 3
35	35	С	Hydrocarbons Revision	Cos 3
			Benzene, Tolaene, BHC, Phenol, Napt	203.3
36	36	С	halene,Benzpic acid	Cos 3
37	37	С	organic chemistry	Cos 3
38	38	D	Industrial Chemistry	Cos 4
39	39	D	Water treatment	Cos 4
40	40	D	Soft water, hard water	Cos 4
41	41	D	Hardness and its removal	Cos 4
42	42	D	Hot lime over cold lime	Cos 4
43	43	D	organic ion exchange method	Cos 4
44	44	D ,	Lubricants	Cos 4
			uses of lubricants and purpose of	
45	45	D	lubrication	Cos 4
46	46	D	Fuel	Cos 4
47	47	D	liquid fuel	Cos 4
48	48	D	gaseous fuel	Cos 4
49	49	D	Polymer,monomer	Cos 4
50	50	D	homo polymer,co polymer	Cos 4
51	51	D	thermosetting, thermoplastic	Cos 4
52	52	D .	Polythene,poly-vinyl	Cos 4
53	53	D	Elastomer, natural rubber	Cos 4
54	54	D	vulcanisation of rubber	Cos 4
55	55			

59 60	59 60	D	chemistry Water treatment & fuel revision	Cos 4	
		,	industrial and agricultural uses of		
58	58	D	Examples and uses of bio fertilizers	Cos 4	
57	57	D 2	Bio fertilizers	Cos 4	*
56	56	D	pesticides and uses	Cos 4	A company to

Subject Teacher

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Principal



CAPITAL ENGINEERING COLLEGE AICTE

PLOT NO. 1293, MAHATAPALLA, BAJAPUR, KHURDA

Session: 2023-2024

Course Name: DIPLOMA

Subject Name: TH 3: Engineering

Section: E Semester: 1 **Branch Name: MECHANICAL**

Theory/Practical: Theory

Teacher Name: RANJAN KUMAR SATAPATHY

Credit "External Evaluation(Marked) "Internal Evaluation(Marked) "

Text Books:

Sl.No	Text Books
1	Elements of mathematics vol- 1&2

Reference books:

SI.No	Reference books		
1	Mathematics part-1 & part-2 text book for class-XII, NCERT publication		

Course Outcomes:

SI.No	Course Outcomes

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught		Reference
1	1	2	TRIGONOMETRY RATIO		
		1	CONCEPT OF RIGHT ANGLE TRIANGLE		
2	2	2	AND PHYTHAGORAS THEOREM	Cos 2	
			TRIGONOMETRIC FUNCTIONS WITH	1	
3	3	2	STANDARD ANGEL	Cos 2	
			PROBLEM ON TRIGONOMETRIC RATIO		
4	4	2	OF SOME SPECIFIC ANGLE	Cos 2	
-			SIGN OF T â€"RATIOS AND SOME		
5	5	2	EXAMPLES	Cos 2	
			TRIGONOMETRY RATIO OF Î, INTERMS		
6	6	2	OF (Î,)		
-			TRIGONOMETRIC RATIO OF		
7	7	2	COMPOUND ANGLE	Cos 2	
	•		SOME EXAMPLES OF TRIGONOMETRIC		- ×
8	8	2	COMPOUND ANGLE		
0			TRIGONOMETRIC RATIO OF 2A IN		
			TERMS OF A (ONLY FORMULLA) AND		
9	9	2	SOME EXAMPLES Cos 2		

			TRIGONOMETRIC RATIO OF 3A IN		
			TERMS OF A (ONLY FORMULLA) AND		
10	10	2	SOME EXAMPLES		
			TRIGONOMETRIC RATIO OF ANGLE A		
			IN TERMS OF A/2 (ONLY FORMULLA)		
11	11	2 2	AND SOME EXAMPLES	Cos 2	
12	12	2	INVERSE CIRCULAR FUNCTION	Cos 2	
		_	PROPERTY OF INVERSE CIRCULAR		
13	13	2	FUNCTION AND SOME EXAMPLE	Cos 2	
15	13		PROBLEM ON INVERSE CIRCULAR		
14	14	2	FUNCTION	Cos 2	
14	14		BASIC CONCEPT ,MATRICES,		
45	45	1	ORDER, TYPES	Cos 1	
15	15	1	MORE TYPES ….	Cos 1	
16	16	1	ADDITION OF MATRICES AND		
		4	PRODUCT OF MATRIX OF A SCALAR	Cos 1	
17	17	1	PRODUCT OF TWO MATRICES	Cos 1	
18	18	1	THE MULTIPLICATIVE INVERSE OF A		
			SQUARE MATRIX	Cos 1	
19	19	1	TRANSPOSE AND ORTHOGONAL	-	
			MATRIX AND MINOR	Cos 1	
20	20	1		Cos 1	
21	21	1	COFACTOR AND ADJOINT OF A	Cos 1	
22	22	1	INVERSE OF A MATRIX	C03 1	
			SOLUTION OF SIMULTANEOUS FOLIATION (MATRIX METHOD)		
23	23	1	EQUATION (MINITAL METITE)		
			SOLUTION OF SIMULTANEOUS		
24	24	1	EQUATION (MATRIX METHOD)		
			INTRODUCTION OF DETERMINANTS		
			AND DETERMINANT OF SECOND		
25	25	1	ORDER AND THIRD ORDER	Cos 1	
			MINOR AND COFACTOR OF		
26	26	1	DETERMINANTS	Cos 1	
		, and a second	PROPERTIES OF DETERMINANTS AND		
27	27	1	SOME PROBLEMS	Cos 1	
28	28	1	CRAMER'S RULE	Cos 1	Contract to the contract of th
29	29	1	EXAMPLE OF CRAMER'S RULE	Cos 1	
30	30	1	PRODUCT OF TWO DETERMINANTS	Cos 1	
		, , , , , , , , , , , , , , , , , , ,	EXAMPLE OF PRODUCT OF TWO		
31	31	1	DETERMINANTS	Cos 1	
- 51			INTRODUCTON OF GEOMETRY IN TWO		
32	32	3	DIMENSION Cos 3		
- 32			DISTANCE FORMULLA AND DIVISION		
33	33	3	FORMULLA AND SOME EXAMPLE	Cos 3	
33			AREA OF TRIANGLE (FORMULLA) AND		
34	34	3	SOME EXAMPLE	Cos 3	
34	3-1		SLOPE OF A LINE AND ANGLE		
35	35	3	BETWEEN TWO LINES	Cos 3	
33	33				

36 36 3				CONDITION OF PERENDICULARITY			
37 37 3 DIFFERENT FORMS OF STRIGHT LINES Cos 3	36	36	3		Cos 3		
38 38 3 3 5 5 5 5 5 5 5 5							
38 38 3 FORMS	3,	37			0033		
39 39 3 SLOPE FORMS AND INTERCEPT FORMS Cos 3	38	3.8	3		Cos 3		
40							
EQUATION OF LINE PASSING							
41	10	40	3		C03 3		
42 42 4 DISTANCE OF A POINT FROM A LINE Cos 4	/11	41	2		Cos 3		
A3							
43	42	42	4		C03 4		
PROBLEM ON CENTER AND RADIUS OF CIRCLE	/13	12	4		Cos 4		
44 44 4 CIRCLE Cos 4 45 45 4 GENERAL EQUATION OF A CIRCLE Cos 4 46 46 4 END POINT OF DIAMETER FORM Cos 4 47 47 5 INTRODUCTION OF SPACE AND THREE DIMENSIONS Cos 5 48 48 5 DISTANCE FORMULAE AND SECTION FORMULAE AND SECTION FORMULAE Cos 5 49 49 5 COSINE Cos 5 49 49 5 COSINE Cos 5 ANGLE BETWEEN TWO LINE (PARALLELISM) Cos 5 Cos 5 50 5 (PARALLELISM) Cos 5 51 5 (PERPENDICULARITY) Cos 5 51 5 (PERPENDICULARITY) Cos 5 52 52 5 ANGLE BETWEEN TWO PLANE AND GENERAL FORM OF EQUATION OF A PLANE AND GENERAL FORM OF A PLANE AND GENERAL FORM OF A PLANE AND	45	43	4		C03 4		
45	44	44	4	THE RESIDENCE OF THE PROPERTY	Cos 4		
46 46 4 END POINT OF DIAMETER FORM Cos 4 INTRODUCTION OF SPACE AND THREE DIMENSIONS Cos 5 DISTANCE FORMULAE AND SECTION FORMULAE Cos 5 DIRECTION RATIO AND DIRECTION COSINE Cos 5 ANGLE BETWEEN TWO LINE (PARALLELISM) Cos 5 ANGLE BETWEEN TWO LINE (PERPENDICULARITY) Cos 5 INTRODUCTION OF A PLANE AND GENERAL FORM OF EQUATION OF PLANE Cos 5 ANGLE BETWEEN TWO PLANES Cos 5 PERPENDICULAR DISTANCE OF A POINT FROM PLANE Cos 5 EQUATION OF A PLANE PASSING THROUGH A POINT PARALLEL TO A PLANE Cos 6 EQUATION OF A PLANE PASSING THROUGH A POINT PERPENDICULAR TO A PLANE Cos 6 INTRODUCTION ON SPHERE AND FOR A PLANE COS 6 INTRODUCTION ON SPHERE COS 6 INTRODUCTION ON SPHERE COS 6 EQUATION OF A SPHERE COS 6							
A7							
47	40	46	4		COS 4		
A8	47	47	_		05		
48	4/	47	5		Cos 5		
DIRECTION RATIO AND DIRECTION	40	40	_				
49	48	48	5		Cos 5		
ANGLE BETWEEN TWO LINE	40	40	_				
SO SO S (PARALLELISM) Cos 5	49	49	5		Cos 5		
ANGLE BETWEEN TWO LINE (PERPENDICULARITY) (PERPENDICULARITY) (PERPENDICULARITY) (PERPENDICULARITY) (PERPENDICULARITY) (PERPENDICULAR AND GENERAL FORM OF EQUATION OF PLANE Cos 5 (PERPENDICULAR DISTANCE OF A POINT FROM PLANE Cos 5 (PERPENDICULAR DISTANCE OF A POINT FROM PLANE Cos 5 (PEQUATION OF A PLANE PASSING THROUGH A POINT PARALLEL TO A PLANE Cos 6 (PEQUATION OF A PLANE PASSING THROUGH A POINT PERPENDICULAR THROUGH A POINT PERPENDICULAR TO A PLANE Cos 6 (PEQUATION ON SPHERE AND EQUATION ON SPHERE AND EQUATION OF A SPHERE Cos 6 (PEQUATION OF SPHERE Cos 6 (PEQUATION OF SPHERE Cos 6 (PEQUATION OF SPHERE Cos 6 (PERPENDICULARITY) (PERPENDICULA		50	_				
51 51 5 (PERPENDICULARITY) Cos 5	50	50	5		Cos 5		
INTRODUCTION OF A PLANE AND GENERAL FORM OF EQUATION OF PLANE Cos 5			_				
GENERAL FORM OF EQUATION OF	51	51	5		Cos 5		
52 52 5 PLANE Cos 5 53 53 5 ANGLE BETWEEN TWO PLANES Cos 5 54 54 5 PERPENDICULAR DISTANCE OF A POINT FROM PLANE Cos 5 54 54 5 POINT FROM PLANE PASSING THROUGH A POINT PARALLEL TO A PLANE PASSING THROUGH A POINT PERPENDICULAR TO A PLANE PASSING THROUGH A POINT PERPENDICULAR TO A PLANE Cos 6 56 56 6 TO A PLANE TO A PLANE TO A PLANE COS 6 57 57 6 EQUATION ON SPHERE AND EQUATION OF A SPHERE COS 6 58 58 6 CENTER AND RADIUS FORM COS 6 59 59 6 GENERAL FORM OF SPHERE COS 6							
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	60	60	6	SOME PROBLEM ON SPHERE Cos 6			

They subject Teacher

HOD

Principal



CAPITAL ENGINEERING COLLEGE

AICTE

PLOT NO. 1293, MAHATAPALLA, BAJAPUR,KHURDA Session: 2023-2024

Course Name: DIPLOMA

Theory/Practical: Theory Section : E

Section : E Semester : 1 Branch Name: MECHANICAL

Subject Name: TH 2B: Engineering Chemistry

Teacher Name: SUMAN JENA

Credit " External Evaluation(Marked) '80' Internal Evaluation(Marked) '20'

Text Books:

SI.No	Text Books
1	Text book of intermediate Chemistry Part 1 & part 2 by Nanda, Das, Sharma, Kalyani Publishers
2	Engg. Chemistry by B.K Sharma Krishna Prakashan Media Pvt. Ltd.

Reference books:

SI.No	Reference books
1	Engineering Chemistry-Jain & Jain, Dhanpat Roy & Sons

Course Outcomes:

SI.No	Course Outcomes
1	After Completion of the course the students will be able to Apply the basic concepts of electrochemistry ,Acid base salt
2	Understand various uses and processes of Metallurgy and composition of Alloys
3	To Analyze and Apply the basic concepts of Hydrocarbons , IUPAC nomenclature and uses of aromatic compounds
4	Students will be able To Develop innovative methods for water treatment and uses of Polymers and Bio fertilizers

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
1	1	Α	Atomic Structure	Cos 1	
2	2	Α	Atomic Mass, Isotopes	Cos 1	
3	3	Α	Electronic configuration	Cos 1	
4	4	Α	Bohr,Aufbau's principle,Hund's rule	Cos 1	
5	5	Α	Chemical Bonding	Cos 1	
6	6	Α	Acid Base Theory	Cos 1	
7	7	Α	Salt		
8	8	Α	Solutions	Cos 1	
9	9	Α		Cos 1	
10	10	A	pH Solution	Cos 1	
11	11	A	Electrochemistry	Cos 1	
12	12		Faraday's 1st and 2nd	Cos 1	
13	13	Α	Electrolysis	Cos 1	
	13	Α	Corrosion	Cos 1	

SL No.	Lecture No.	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
14	14	A	Protection from Corriosion	Cos 1	
15	15	Α	Physical Chemistry Revision	Cos 1	
16	16	В	Metallurgy	Cos 2	A CONTRACTOR OF THE CONTRACTOR
17	17	В	Ores and Minerals	Cos 2	
18	18	В	Extraction of Metals	Cos 2	
19	19	В	Extraction of Metals	Cos 2	
20	20	В	Oxidation,Reduction	Cos 2	
21	21	В	Alloys	Cos 2	
22	22	В	Alloys	Cos 2	
23	23	В	Inorganic Chemistry Revision	Cos 2	
24	24	С	Organic chemistry	Cos 3	
25	25	С	Hydrocarbons	Cos 3	
26	26	С	Aliphatic & Aromatic hydrocarbons	Cos 3	
27	27	С	Huckle's rule	Cos 3	
28	28	С	IUPAC Nomenclature	Cos 3	
29	29	С	IUPAC Nomenclature	Cos 3	
30	30	С	IUPAC Nomenclature	Cos 3	
31	31	С	Bond line notation	Cos 3	
32	32	С	Bond line notation	Cos 3	
33	33	С	Aromatic compounds	Cos 3	
34	34	С	Uses	Cos 3	
35	35	С	Hydrocarbons Revision	Cos 3	
36	36	С	Benzene,Tolaene,BH C,Phenol,Napthalene, Benzpic acid	Cos 3	
37	37	С	organic chemistry	Cos 3	
38	38	D	Industrial Chemistry	Cos 4	
39	39	D	Water treatment	Cos 4	
40	40	D	Soft water, hard water	Cos 4	
41	41	D	Hardness and its removal	Cos 4	
42	42	D	Hot lime over cold lime	Cos 4	
43	43	D	organic ion exchange method	Cos 4	
44	44	D	Lubricants	Cos 4	
45	45	D = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 =	uses of lubricants and purpose of lubrication	Cos 4	
46	46	D	Fuel	Cos 4	
47	47	D	liquid fuel	Cos 4	

SL No.	Lecture	Module/Unit No.	Topic To Be Taught	Cos	Reference Material Links
	No.	and the second s			
48	48	D D	gaseous fuel	Cos 4	
49	49	D	Polymer,monomer	Cos 4	
50	50	D	homo polymer,co polymer	Cos 4	
51	51	D	thermosetting,thermo plastic	Cos 4	
52	52	D	Polythene,poly-vinyl chloride,bakelite	Cos 4	4
53	53	D	Elastomer,natural rubber	Cos 4	
54	54	D	vulcanisation of rubber	Cos 4	
55	55	D	chemicals in agriculture	Cos 4	
56	56	D	pesticides and uses	Cos 4	
57	57	D	Bio fertilizers	Cos 4	
58	58	D	Examples and uses of bio fertilizers	Cos 4	
59	59	D	industrial and agricultural uses of chemistry	Cos 4	
60	60	D	Water treatment & fuel revision	Cos 4	

Subject Teacher

Principal