



## Veermata Jijabai Technological Institute (V.J.T.I)

(Central Technological Institute, Maharashtra State, INDIA)

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### Programme Name: Diploma In Electronics Engineering

Programme Code	: DELNE	With Effect From Academic Year	: 2023-24
Duration of Programme	: 6 Semester	Duration	: 16 Weeks
Semester	: First	Scheme	: R-2023

Sr No	Course Title	Abbreviation	Course Type	Course Code	Total IKS Hrs for Sem.	Learning Scheme					Credits	Paper Duration (hrs.)	Assessment Scheme										Total Marks	
						Actual Contact Hrs./Week			Self-Learning (Term Work + Assignment)	Notional Learning Hrs. /Week			Theory					Based on LL & TL				Based on Self Learning		
						CL	TL	LL					Theory			Practical		SLA						
													FA-TH (MST)	SA-TH (ESE)	Total	FA-PR	SA-PR	Max	Min					
1	BASIC MATHEMATICS	BM	AEC	233MA11	6	3	2	-	2	7	3.5	3	30	70	28	100	40	25@	10	-	-	-	-	125
2	CHEMISTRY	CHY	DSC	233PH12	2	3	-	2	1	6	3	3	30	70	28	100	40	25@	10	25#	10	25@	10	175
3	TECHNICAL COMMUNICATION SKILLS (ENGLISH)	ENG	AEC	233HM13	3	3	-	2	1	6	3	3	30	70	28	100	40	-	-	25#	10	25@	10	150
4	FUNDAMENTALS OF ELECTRICAL AND ELECTRONICS ENGINEERING	FOEEE	DSC	233EX14	-	3	-	2	1	6	3	3	30	70	28	100	40	25@	10	25#	10	25@	10	175
5	ENGINEERING GRAPHICS	EG	DSC	234ME15	-	2	-	4	-	6	3	-	-	-	-	-	-	25@	10	25#	20	50@	20	100
6	COMPUTER PROGRAMMING	CP	SEC	234EX16	-	1	2	2	2	7	3.5	-	-	-	-	-	-	25@	10	50#	20	25@	10	100
7	YOGA AND STRESS MANAGEMENT	YSM	VEC	234EX17	1	-	-	1	1	2	1	-	-	-	-	-	-	-	-	25#	10	25@	10	50
<b>Total</b>					<b>12</b>	<b>15</b>	<b>4</b>	<b>13</b>	<b>8</b>	<b>4</b>	<b>20</b>	<b>-</b>	<b>120</b>	<b>280</b>	<b>-</b>	<b>400</b>	<b>-</b>	<b>125</b>	<b>-</b>	<b>175</b>	<b>-</b>	<b>175</b>	<b>-</b>	<b>875</b>

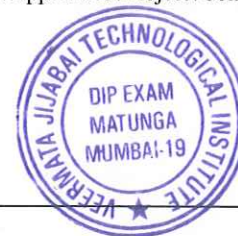
**Abbreviations:** CL- Classroom Learning, TL- Tutorial Learning, LL-Laboratory Learning, FA - Formative Assessment, SA -Summative Assessment, IKS - Indian Knowledge System, SLA - Self Learning Assessment

**Legends:** @ Internal Assessment, # External Assessment, \*# On Line Examination, @\$ Internal Online Examination

**Course Category:** Discipline Specific Course Core (DSC): 2, Discipline Specific Elective (DSE): 0, Value Education Course (VEC): 1, Intern. /Apprentice /Project /Community (INP): 0, Ability Enhancement Course (AEC): 2, Skill Enhancement Course (SEC): 2, Generic Elective (GE): 0

  
Curriculum Coordinator

  
Head Diploma in Electronics Engineering



  
Dean - Diploma

DIPLOMA PROGRAMME	: DIPLOMA IN ELECTRONICS ENGINEERING
PROGRAMME CODE	: DELNE
SEMESTER	: FIRST
COURSE TITLE	: BASIC MATHEMATICS
COURSE CODE	: 233MA11

### I. TEACHING AND EXAMINATION SCHEME:

TEACHING SCHEME						ASSESSMENT SCHEME														
CL	TL	LL	Self-learning	CR	Total IKS Hrs for Sem	PAPER HRS	FA-TH (MST)			SA-TH (ESE)		TOTAL		Based on LL & TL Practical				Based on Self-learning		TOTAL MARKS
							Max	Max	Min	Max	Min	FA-PR (CA)		SA-PR (PR/OR)		SLA				
												Max	Min	Max	Min	Max	Min			
3	2	-	2	3.5	6	3	30	70	28	100	40	25	10	-	-	-	-	125		

### II. RATIONALE

To teach students basic facts, concepts and principles of mathematics as tool to analyze engineering problems.

To make students well versed in the prerequisites for further studies in mathematics and engineering.

### III. COURSE OUTCOMES (COS)

Students will be able to achieve the following COS on completion of course based learning

CO1:	Use Determinant and Matrices to solve simultaneous linear equations.
CO2:	Apply basic concepts in trigonometry to solve engineering problems.
CO3:	Define function and find limit of function. Use derivatives to solve the engineering problems.



IV. COURSE CONTENTS WITH SPECIFICATION TABLE

SECTION - I								
Unit & Sub-Unit	Topics/Subtopics	Hours	Marks	COs	R Level	U Level	A Level	
<b>1</b>	<b>Determinants</b>	<b>4</b>	<b>9</b>	<b>1</b>	<b>40%</b>	<b>40%</b>	<b>20%</b>	
	1.1	Introduction to Determinant.						
	1.2	Solving Determinant of order two and three.						
	1.3	Properties of determinants						
	1.4	Introduction to Cramer's rule.						
<b>2</b>	<b>Matrices</b>	<b>5</b>	<b>10</b>	<b>1</b>	<b>40%</b>	<b>40%</b>	<b>20%</b>	
	2.1	Introduction to Matrices, Transpose of a matrix, identity matrix, Symmetric and Skew Symmetric. Orthogonal matrices.						
<b>3</b>	<b>2.2</b>	<b>Addition and subtraction of matrices, multiplication of matrices</b>						
	2.3	Adjoint of a matrix, inverse of a matrix using adjoint.						
<b>3</b>	<b>Function and Limits</b>	<b>6</b>	<b>10</b>	<b>3</b>	<b>40%</b>	<b>20%</b>	<b>20%</b>	
	3.1	Definition of function with properties and solve Examples						
	3.2	Logarithms and Composite functions.						
	3.3	Concept of limit of a function.						
	3.4	Limits of algebraic functions with solve problem using standard Limit						
<b>4</b>	<b>Straight Line</b>	<b>3</b>	<b>6</b>	<b>3</b>	<b>40%</b>	<b>40%</b>	<b>20%</b>	
	4.1	Equations of straight lines in different forms: Two points form, slope y-intercept form, angle point form.						
	4.2	Angle between two straight lines.						
<b>5</b>	<b>Indian Knowledge System Information about Ancient Indian Mathematicians</b>	<b>6</b>						



SECTION - II								
Unit & Sub-Unit	Topics/Subtopics		Hours	Marks	COs	R Level	U Level	A Level
6		<b>Trigonometry</b>	10	18	2	40%	40%	20%
	6.1	Circular measure, Conversion from degrees to radians and radians to degrees.						
	6.2	Trigonometric ratios of negative angles, Trigonometric ratios of compound, Allied multiple and sub multiple angle. (without proof)						
	6.3	Factorization and De-factorization, Multiple, submultiples angle formula. (without proof)						
	6.4	Inverse trigonometric functions, definition, Related basic problems.						
7		<b>Derivatives</b>	07	17	3	40%	40%	20%
	7.1	Introduction to Derivatives, Principle and geometrical interpretation.						
	7.2	Derivatives of standard functions						
	7.3	Theorems of derivatives. Simple problems						
	7.4	Derivative of composite function. (chain rule)						
	7.5	Derivative of implicit function, parametric function.						
Legends: R- Remember, U – Understand, A – Apply and above levels (Blooms’s Revised Taxonomy).								

#### V. LIST OF PRACTICALS/ASSIGNMENTS/TUTORIALS

Sr. No.	Practical/Assignment/Tutorial Title	No. of Hours	Relevant COs
1	Determinants	2	1
2	Matrices	2	1
3	Circular Measures, Trigonometric ratios and identities	2	2
4	Compound, allied angles formulae, factorization, de-factorization formulae	2	2
5	Multiple, submultiple formulae	2	2



6	Inverse trigonometric functions	2	2
7	Functions	2	3
8	Limit	2	3
9	Derivatives	2	3
10	straight lines	2	3

## VI. ASSESSMENTS METHODOLOGIES /TOOLS

Formative assessment (Assessment for Learning)

- Tutorials
- Mid Semester Test
- Self-learning
- Term Work

Summative Assessment (Assessment of Learning)

- End Semester Examination.

## VII. SUGGESTED LEARNING MATERIALS TEXTBOOKS/REFERENCE BOOKS/ WEBSITES

Course Outcomes (COs)	Programme Outcomes (POs)							Programme Specific Outcomes* (PSOs)				
	PO-1 Basic and Discipline Specific Knowledge	PO-2 Problem Analysis	PO-3 Design/ Development of Solutions	PO-4 Engineering Tools	PO-5 Engineering Practices for Society, Sustainability and Environment	PO-6 Project Management	PO-7 Life Long Learning	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
CO1	2	1	1	1	0	0	1	2	1	0	0	-
CO2	2	1	1	1	0	0	1	2	1	0	0	-
CO3	2	1	1	1	0	0	1	2	1	0	0	-

Legends :- High:03, Medium:02,Low:01, No Mapping: -



VIII. SUGGESTED LEARNING MATERIALS TEXTBOOKS/REFERENCE BOOKS/  
WEBSITES

IX.

Sr. No	Author	Title	Publisher
1	B. M. Patel, J. M. Rawal	Applied Mathematics	Nirali Prakashan
2	S. P. Deshpande	Mathematics for Polytechnic	Pune Vidyarthi Griha Prakashan.
3	Deepak Singh	Mathematics-I	Khanna Book Publishing Co. (P) Ltd. ISBN: 978-93-91505-42-4
4	Garima Singh	Mathematics-II	Khanna Book Publishing Co. (P) Ltd. ISBN: 978-93-91505-52-3

  
Curriculum Coordinator

  
Head of the Department

  
Dean Diploma



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BOS VJTI Approval dated 1/8/2023

DIPLOMA PROGRAMME	: DIPLOMA IN ELECTRONICS ENGINEERING
PROGRAMME CODE	: DELNE
SEMESTER	: FIRST
COURSE TITLE	: CHEMISTRY
COURSE CODE	: 233CH12

### I. TEACHING AND EXAMINATION SCHEME:

TEACHING SCHEME						ASSESSMENT SCHEME											
CL	TL	LL	Self-learning	CR	Total IKS Hrs for Sem	PAPER HRS	FA-TH (MST)	SA-TH (ESE)	TOTAL		Based on LL & TL Practical				Based on Self-learning		TOTAL MARKS
							Max	Max	Max	Min	FA-PR (CA)		SA-PR (PR/OR)		SLA		
											Max	Min	Max	Min	Max	Min	
3	-	2	2	3	2	3	30	70	100	40	25	10	25@	10	25	10	175

### II. RATIONALE

Chemistry is a basic science subject which is essential to all engineering courses. It gives knowledge of basic chemistry, properties, related chemical reactions for engineering applications. This subject will generate curiosity of carrying out further development in engineering fields. The knowledge for the utilization of fundamentals of corrosion resistance is important in troubleshooting of the problems related material corrosion. Understanding of properties helps in selecting appropriate materials such as alloys and polymers for engineering applications.

### III. COURSE OUTCOMES (COS)

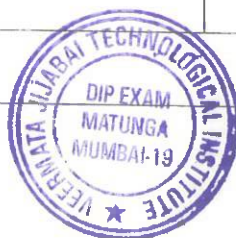
Students will be able to achieve the following COS on completion of course based learning

CO1:	Define and identify various types of atoms and chemical compounds and their properties such as acids, bases, salts and titrations for concentration determination.
CO2:	Apply the knowledge of conductivity of electrolytes, electrolysis, alloys, superconductors, insulators, lubricants, redox reactions and various corrosion protection methods in engineering applications.
CO3:	Demonstrate safe and proper use of chemicals, glass wares and equipment's through laboratory experiment.



IV. COURSE CONTENTS WITH SPECIFICATION TABLE

SECTION-I							
Unit & Sub-Unit	Topics/Sub-topics	Hrs	Marks	CO	R Level	U Level	A Level
1	<b>Atomic Structure and Chemical Bonding</b>	09	13	1	40%	40%	20%
1.1	Definitions of Elements, atom, Molecules, Fundamental particles of atom, their mass, charge, location, Definition of atomic number, atomic mass number, Isotopes and Isobars, Electronic configuration based on Hunds Rule, Aufbau's principle, n+l) Rule, Pauli's exclusion principle (up to atomic no. 30).						
1.2	Definitions: atomic weight, equivalent weights of an element, Molecular weight, Mole in terms of number, mass, volume, Definitions of equivalent weight and, Molecular weight of molecule,						
1.3	Determination of percentage composition of an element in a given molecule,						
1.4	Chemical bond, octet rule, formation of various types of chemical bonds: Covalent, Ionic, Coordinate covalent bonds along with examples CH <sub>4</sub> , H <sub>2</sub> , O <sub>2</sub> , N <sub>2</sub> , NaCl, MgCl <sub>2</sub> , H <sub>3</sub> O <sup>+</sup> , NH <sub>4</sub> <sup>+</sup> , BF <sub>3</sub> -NH <sub>3</sub> .						
2	<b>Solution and Acid, Base &amp; Salt</b>	8	12	1	40%	40	20%
2.1	Solution, Concentrations of solution: Normality, Molarity, Molality.						
2.2	Volumetric analysis, Titrations, Acid base titration, Acidimetry, Alkalimetry, Redox titration, Iodometric titrations, Complexometric titration, and Precipitation titration.						
2.3	Definitions & theories of acids & bases: Arrhenius theory, Lowry-Bronsted theory and Lewis theory.						
2.4	pH, pOH, pH scale.						
2.5	Definition of salts with examples.						
3	<b>Ionic Equilibrium</b>	06	10	2	40%	40	20%
3.1	Electrolytes, Types of Electrolytes, Degree of dissociation & Ostwald's dilution law.						
3.2	Conductivity of Electrolytes – Concept of Ohms Law, Specific Conductivity, Specific Resistance, Equivalent Conductivity & Molar Conductivity,						
3.3	Variation of Specific & Equivalent conductance with dilution, Cell Constant: Definition & Derivation.						





**SECTION-II**

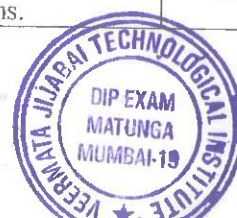
Unit & Sub-Unit	Topics/Sub-topics							
<b>4</b>	<b>Electrochemistry</b>	<b>07</b>	<b>11</b>	<b>2</b>	<b>40%</b>	<b>40</b>	<b>20%</b>	
4.1	Electrochemistry, Electrochemical reactions, Construction and working of electrochemical cell & electrolytic cell,							
4.2	Faradays I & II laws of electrolysis, Applications of electrolysis: electroplating & refining							
4.3	Electrochemical cells and batteries, Construction, working and applications of dry cells, Lead acid storage batteries, fuel cells.							
4.4	Band Gap and Valence Bond Theory (VBT)							
<b>5</b>	<b>Redox Reactions and Corrosion</b>	<b>07</b>	<b>11</b>	<b>2</b>	<b>40%</b>	<b>40%</b>	<b>20%</b>	
5.1	Introduction, Oxidation, Reduction, Electron transfer concept, Oxidising & reducing agents,							
	Definition, Types of corrosion Atmospheric corrosion, oxide films, factors affecting Atmospheric corrosion,							
5.2	Electrochemical corrosion and Galvanic corrosion,							
5.3	Protective measures against corrosion: Electrochemical protection by sacrificial anodic protection and impressed current, cathodic protection coatings (galvanic and zinc, organic coating agents Electroplating, metal cladding,).							
<b>6</b>	<b>Engineering Materials</b>	<b>08</b>	<b>13</b>	<b>2</b>	<b>40%</b>	<b>40%</b>	<b>20%</b>	
6.1	<b>Metals &amp; Alloys (Cu, Zn &amp;Al):</b> Composition, properties and uses							
6.2	<b>Semiconductors and Superconductors:</b> Definition, properties, applications and effect of Temperature.							
6.3	<b>Insulators:</b> Definition of Dielectrics and Insulators, Classifications of Insulating Materials, Properties & Applications of Inert Gases, Silicone Fluids, Mineral Oil, Teflon, Epoxy Resin and Ceramics.							

**Legends:** R- Remember, U – Understand, A – Apply and above levels (Blooms’s Revised Taxonomy).

*Notes: This specification table shall be treated as a general guideline and actual distribution of marks may slightly vary from table. But the questions from each topic should be asked as per marks weightage. Numerical questions are to be asked only if specified.*

**V. LIST OF PRACTICALS/ASSIGNMENTS/TUTORIALS**

Sr. No.	Unit	Practical/Assignment	Approx. Hours	Relevant COS
1	2	To study the use of indicators, for identification of acid, base, and neutral solutions from the given set of solutions.	2	1 & 3



2	2	To standardize HCl solution using N/10 Na <sub>2</sub> CO <sub>3</sub> .	2	1 & 3
3	2	To standardize KMnO <sub>4</sub> solution using N/10 C <sub>2</sub> H <sub>2</sub> O <sub>4</sub> solution.	2	1 & 3
4	2	To standardize EDTA solution using N/10 ZnSO <sub>4</sub> solution	2	1 & 3
5	2	To standardize Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> solution using N/10 K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> solution.	2	1 & 3
6	3	To determine Cell Constant of a conductivity cell.	2	2 & 3
7	4	To conductance of a given solutions of various concentrations.	2	2 & 3
8	4	To determine EMF of a Cell.	2	2 & 3
* Minimum 7 and maximum 8 practicals/experiment sessions to be included in a course in a term				

## VI. ASSESSMENTS METHODOLOGIES /TOOLS

Formative assessment (Assessment for Learning)

- Midterm Test Exam
- Term Work

Summative Assessment (Assessment of Learning)

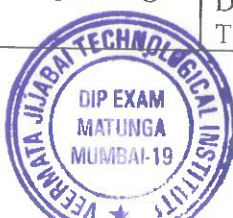
- End Term Exam
- Practicals

## VII. SUGGESTED COS-POS MATRIX FORM

Course Outcomes (COs)	Programme Outcomes (POs)							Programme Specific Outcomes* (PSOs)				
	PO-1 Basic and Discipline Specific Knowledge	PO-2 Problem Analysis	PO-3 Design/ Development of Solutions	PO-4 Engineering Tools	PO-5 Engineering Practices for Society, Sustainability and Environment	PO-6 Project Management	PO-7 Life Long Learning	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
CO1	3	2	1	-	1	-	2	3	1	2	1	-
CO2	3	3	2	-	1	-	1	3	3	2	1	-
CO3	3	3	2	-	1	-	1	3	2	2	2	-
Legends :- High:03, Medium:02,Low:01, No Mapping: - 0												

## VIII. SUGGESTED LEARNING MATERIALS TEXTBOOKS/REFERENCE BOOKS/WEBSITES

Sr. No	Author	Title	Publisher
1	-	XIth standard Chemistry book	HSC Board, M.S. / NCERT
2	-	XIIth standard Chemistry book	HSC Board, M.S. / NCERT
3	Shashi Chawla	A Text Book of Engineering Chemistry	Educational & Technical Publishers Dhanpat Rai & Co. (Pvt.) Ltd, Edition: Third (2005)



Sr. No	Author	Title	Publisher
4	Jain & Jain	Engineering Chemistry	Dhanpat Rai & Co. (Pvt.) Delhi – 110006 Ltd. Edition: (2008)
5	S. S. Dara & S. S. Umare	A Text Book of Engineering Chemistry	S. Chand & Company Ltd. Ram nagar, New Delhi – 110 055, Edition: Twelfth (2010)

#### IX. LEARNING WEBSITES & PORTALS

Sr.No	Link / Portal	Description
1	<a href="http://www.onlinelibrary.wiley.com">www.onlinelibrary.wiley.com</a>	Concepts of basic chemistry
2	<a href="https://www.chem1.com">https://www.chem1.com</a>	Chemistry instruction and education

  
Curriculum Coordinator

  
Head of the Department

  
Dean Diploma



DIPLOMA PROGRAMME	: DIPLOMA IN ELECTRONICS ENGINEERING
PROGRAMME CODE	: DELNE
SEMESTER	: FIRST
COURSE TITLE	: TECHNICAL COMMUNICATION SKILLS
COURSE CODE	: 233HM13

### I. TEACHING AND EXAMINATION SCHEME

TEACHING SCHEME						ASSESSMENT SCHEME											
CL	TL	LL	Self-learning	CR	Total IKS Hrs for Sem	PAPER HRS	FA-TH (MST)	SA-TH (ESE)	TOTAL		Based on LL & TL Practical				Based on Self-learning		TOTAL MARKS
											FA-PR (CA)		SA-PR (PR/OR)		SLA		
									Max	Min	Max	Min	Max	Min	Max	Min	
3	-	2	1	3	3	3	30	70	100	40	-	-	25#	10	25@	10	150

### II. RATIONALE

Cultivating Reading, Writing, Listening, and Speaking skills in students by giving exposure to good language, enhancing the power of expression through vocabulary exercises, improving skills of composition, promoting coherence in thinking, assimilating and reproducing ideas, and enabling the students to formulate grammatically correct sentences thereby developing their ability to communicate effectively in industry, professional fields, in academic and social circles. Developing life skills by enhancing communication skills. Students will get exposure to leadership qualities (problem-solving attitude) by participating in different curriculum activities. All these will enhance their confidence and build good language. Making students proficient in oral skills through various activities that will enable them to perform efficiently during interviews, meetings, seminars, conferences, group discussions, and negotiations. Thus, developing a problem-solving attitude among students by synergizing their Emotional quotients with their Intellectual quotient through various activities will also provide exposure to learn and groom their soft skills. Giving exposure to self-learning by providing enough materials through the language laboratory's ETNL software and open source software.



- a) In order to develop the writing abilities of students, some textbooks that give exposure to language have been introduced.
- b) The tutorials have been incorporated to provide practice to the students to develop writing skills.
- c) Vocabulary exercises are given to enhance word power while writing.
- d) Grammar topics are taught by giving sufficient practice material to help them formulate grammatically correct sentences.
- e) Idioms, phrases, and proverbs, Quotations are introduced in order to acquire fluency and richness to their language while expressing ideas through writing.

### III. COURSE OUTCOMES (COs)

Students will be able to achieve the following COs on completion of course based learning

CO1 -Acquiring the ability to formulate grammatically correct sentences

CO2 – Improving the power of expression in written communication

CO3 - Developing coherence in thinking, comprehending, and expressing one's ideas in one's own language

### IV. COURSE CONTENTS WITH SPECIFICATION TABLE

SECTION - I								
Unit & Sub-Unit	Topics/Subtopics	Hours	Marks	COs	R Level	U Level	A Level	
1		Emnating Voices- textbook 1		10	CO3	30%	50%	20%
	1.1	The Mother of a Traitor- Maxim Gorky	2					
	1.2	Speeches at the world's Parliament of Religions- Swami Vivekananda (Indian Knowledge system)	2					
	1.3	Appro JRD -Sudha Murthy (Indian Knowledge system, impact of Indian culture in an Indian Industrialist and inculcation of moral values and professional ethics through chapter 1.2 and 1.3)	2					



2		Igniting Minds- textbook II		8	CO3	40%	40%	20%
	2.1	What teenagers Need to Know about Cybersecurity- Sanjay Goyel	2					
	2.2	India What can it teach us? -Max Muller	2					
3	3.1	Written and spoken communication in English English in use <ul style="list-style-type: none"> <li>English for routine communicative function</li> <li>English in common interactive situations</li> <li>Speech in practice</li> <li>Paragraph writing</li> <li>Essay writing</li> <li>Application letters as per the Industrial situation</li> <li>Critical Analysis</li> <li>Powerpoint presentation based on texts as well as drawing parallels from industry</li> </ul>	6	9	CO1	40%	40%	20%
		Grammar and sentence formation <ul style="list-style-type: none"> <li>Use of technical vocabulary</li> <li>Verbs kinds and Uses</li> <li>Tenses kinds and uses</li> <li>Subject-verb agreement</li> <li>Active passive voice</li> <li>Prepositions</li> <li>Types of sentences</li> </ul>	8	8	CO1	40%	40%	20%
<b>SECTION - II</b>								
<b>Unit &amp; Sub-Unit</b>	<b>Topics/Subtopics</b>		<b>Hours</b>	<b>Marks</b>	<b>COs</b>	<b>R Level</b>	<b>U Level</b>	<b>A Level</b>
4	Comprehension-			05	CO2	20%	40%	40%



4.1	Short composition Paragraph writing Coherence Correct grammar Good vocabulary Creative Writing Proper structure Description of an object or a product or a situation. -use of technical words development of ideas developing a story/ poetry/ paragraph	02					
4.2	Comprehension passage a) Summarization of passages in own words. (Newspaper articles, general articles, etc.) b) Identifying the theme of the passage precisely and enumerating the sub-points	02	05	CO2	20%	40%	40%
4.3	Vocabulary Building a) Synonyms b) Antonyms c) Homophones d) One-word substitute e) Homonyms	08	10	CO1	20%	40%	40%
5	Application of grammar a) Correction of common errors in English b) Tenses c) Verbs d) Sentence structure e) Email Etiquette –drafting technique f) leave applications g) grievance letter (campus situations) h) Use of the famous quotations	4	05	CO1	40%	40%	20%



6	6.1	Use of refined language a) Idioms. b) Proverbs c) Phrases d) Quotations	08	10	CO2	40	40%	20%
		TOTAL	48	70				

**Legends:** R- Remember, U – Understand, A – Apply and above levels (Blooms’s Revised Taxonomy).

#### V. LIST OF PRACTICALS/ASSIGNMENTS/TUTORIALS

Sr. No.	Practical/Assignment/Tutorial Title	No. of Hours	Relevant COs
1	Synonyms & Antonyms	2	2
2	Homophones & Homonyms	2	2
3	Prepositions	2	2
4	One Word Substitutes	2	2
5	Official/Industrial letters/ applications	2	2
6	Phrasal verbs	2	2
7	Phonetics- a) Voice Modulation b) Intonation- rise and fall of pitch	2	2
8	Idioms	2	3
9	Email Etiquette	2	3
10	Proverbs	2	2
11	Sentence structure	2	3
12	Correction of Errors (grammatical)	2	1

#### VI. ASSESSMENTS METHODOLOGIES /TOOLS

Formative assessment (Assessment for Learning)

- Tutorials
- Midterm Test Exam
- Self-learning
- Term Work
- Seminar/Presentation





### Assignments (if any)

- Journal Writing/ Maintain a fortnight dairy entry and write the same on the assignment sheets
- Write a blog/post an article and write the same on an assignment sheet

### Micro Project (if any)

### Summative Assessment (Assessment of Learning)

- End Term Exam
- Tutorial Performance

## VII. SUGGESTED COS-POS MATRIX FORM

Course Outcomes (COs)	Programme Outcomes (POs)							Programme Specific Outcomes * (PSOs)	
	PO-1 Basic and Discipline Specific Knowledge	PO-2 Problem Analysis.	PO-3 Design/ Development of Solutions	PO-4 Engineering Tools	PO-5 Engineering Practices for Society, Sustainability and Environment	PO-6 Project Management	PO-7 Life Long Learning	PSO- 1	PSO- 2
CO1	1	1	1	0	3	2	2	2	2
CO2	1	1	1	0	3	2	2	2	2
CO3	1	1	1	0	3	2	2	2	2
CO4									

Legends :- High:03, Medium:02,Low:01, No Mapping: -  
PSO1: Ability to apply knowledge of selecting raw materials, machines and process parameters using standard methods and engineering tools for designing solutions to meet specific needs of the textile industry.  
PSO2: Understand the impact of textile processes in societal and environmental context and demonstrate the knowledge for sustainable development through teamwork and effective communication for lifelong learning.

## VIII. SUGGESTED LEARNING MATERIALS TEXTBOOKS/REFERENCE BOOKS/WEBSITES

Sr. No	Author	Title	Publisher
1	Board of Editors – Ajiet Ravikant Jachak, Neehal Shikh & Sawan Dharmapuriwar	Emanating Voices (Book1)	Orient Black Swan, First edition 2019.



2	Board of Editors – Indrajeet K Orke, Dr. Madhukarrao Wasnik. P. W. S, Maroti Wagh, Veena Ilame, Manushree Sardeshpande, Narayan Mehare, Subhashree Mukherjee	Igniting Minds (Book II)	Orient Black Swan, First edition, 2021
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#### IX . LEARNING WEBSITES & PORTALS

Sr.No	Link / Portal	Description
1	<a href="https://www.britishcouncil.in/english/learn-online">https://www.britishcouncil.in/english/learn-online</a>	The website link is given to refer to Unit 1
2	Vocabulary.com	Refer to this website for interactive vocabulary quizzes, word lists
3	International Phonetic Association (IPA) Website	It offers audio examples and charts to help understand and transcribe sounds
4	<a href="http://grammarly.com/blog">grammarly.com/blog</a>	For constructing effective paragraphs and improving clarity
5	<a href="http://www.newagegolden.com">www.newagegolden.com</a>	Refer to this website for speech writing, diary entry, and paragraph writing

  
Curriculum Coordinator

  
Head of the Department

  
Dean Diploma

BOS VJTI Approval dated 1/8/2023



<b>DIPLOMA PROGRAMME</b>	: <b>DIPLOMA IN ELECTRONICS ENGINEERING</b>
<b>PROGRAMME CODE</b>	: <b>DELNE</b>
<b>SEMESTER</b>	: <b>FIRST</b>
<b>COURSE TITLE</b>	: <b>FUNDAMENTALS OF ELECTRICAL &amp; ELECTRONICS ENGINEERING</b>
<b>COURSE CODE</b>	: <b>233EX14</b>

### I. TEACHING AND EXAMINATION SCHEME

TEACHING SCHEME						ASSESSMENT SCHEME												
CL	TL	LL	Self-learning	CR	Total IKS Hrs for Sem	PAPER HRS	FA-TH (MST)			SA-TH (ESE)		TOTAL		Based on LL & TL Practical		Based on Self-learning		TOTAL MARKS
							Max	Max	Min	Max	Min	FA-PR (CA)		SA-PR (PR/OR)		SLA		
												Max	Min	Max	Min	Max	Min	
3	-	2	1	3	1	3	30	70	28	100	40	25	10	25	10	25	10	175

### II. RATIONALE

To teach students basic facts, concepts and principles of resistor, capacitor and inductor in engineering problems. To make students well versed in the prerequisites for further studies in electronics and engineering.

### III. COURSE OUTCOMES (COS):

Students will be able to achieve the following COS on completion of course based learning

CO1- Acquire comprehension of the fundamental principles inherent in electrical and electronics engineering, encompassing both mathematical rigor and engineering technological intricacies.

CO2 - Ability to interpret and depict various components and symbols employed in electrical wiring and circuit diagrams.

CO3 - Master comprehension of the capabilities and limitations of passive components and active devices, coupled with proficiency in solving circuits configured in series, parallel, and series-parallel arrangements.



IV. COURSE CONTENTS WITH SPECIFICATION TABLE:

SECTION - I							
Unit & Sub-Unit	Topics/Sub-topics	Hrs	Marks	COS	R Level	U Level	A Level
1	<b>Electrical terminologies and resistance</b>	8	20				
1.1	Electricity and Electrical System	1	4	1	30%	30%	40%
1.2	Electric charge: Electron charge, Movement of Electrons, electron current and conventional current.	1	2	1	30%	30%	40%
1.3	Potential Difference and EMF, Work, Power, and Energy	1	2	3	30%	30%	40%
1.4	Resistance, unit of resistance, factors affecting resistance and ohms law,	1	2	1	30%	30%	40%
1.5	Effect of temperature and Temperature coefficient. (Numerical)	1	2	1	30%	30%	40%
1.6	Types of resistors and resistor color code method.	1	2	1	30%	30%	40%
1.7	Resistive circuits: Series resistive circuit and equivalent resistance derivation and voltage division in series resistive circuit. Parallel resistive circuit and equivalent resistance derivation and current division in series resistive circuit. (Numerical)	1	4	3	30%	30%	40%
1.8	Concepts of conductor and insulator.	1	2	1	30%	30%	40%
2	<b>Electronic Symbols and components</b>	5	10				
2.1	Switches, Relays, Circuit Breaker, Fuses	1	2	1	40%	40%	20%
2.2	Pilot Lights, Bells, Buzzer, Horn, Siren, Batteries, Meters, Resistors, Capacitors, Inductors, Coils, Transformers, AC & DC Motors	1	1	2	40%	40%	20%



2.3	Semiconductor Devices like Diodes, Transistors, SCR, Optoelectronic Devices & Others	0.5	1	2	40%	40%	20%
2.4	Identifications and colour code of different components: Resistors, Capacitors, Inductors.	1	2	3	40%	40%	20%
2.5	Different types of wires and cables, standard wire gauge and current ratings.	0.5	1	1	40%	40%	20%
2.6	Bread Board and its connection., Measurements using DMM.	0.5	2	1	40%	40%	20%
2.7	Materials used for components: Insulator, Conductors and Semiconductors.	0.5	1	2	40%	40%	20%
<b>3</b>	<b>Types of wiring diagrams</b>	<b>5</b>	<b>10</b>				
3.1	Circuit (or Schematic) diagram Looping-In Wiring diagram Joint-Box Wiring diagram Single Line diagram.	2	4	2	30%	30%	40%
3.2	Residential (House) Wiring of: Hall and kitchen	1	2	2	30%	30%	40%
3.3	Use of 2-way, intermediate switches in staircase wiring,	1	2	2	30%	30%	40%
3.4	Three-phase to single-phase conversion, Industrial wiring	1	2	3	30%	30%	40%

SECTION - II							
Unit & Sub-Unit	Topics/Sub-topics	Hrs	Marks	CO	R Level	U Level	A Level
<b>4</b>	<b>Magnetism and Electromagnetism</b>	<b>8</b>	<b>10</b>				
4.1	Introduction to magnetism and magnetic field	2	2	1	20%	30%	50%
4.2	Absolute and Relative Permeability of a Medium, Laws of Magnetic Force, Magnetic	2	3	2	20%	30%	50%



	field strength, Flux & Flux Density, MMF & Magnetic circuit.						
4.3	Magnetic field due to electric current, Electromagnetic, magnetic field near straight conductor and at the center of current carrying coil, Force on current carrying conductor. Flemings Left hand and Right hand rules.	2	3	1,3	20%	30%	50%
4.4	Problems based on calculation of Ampere Turns and magnetic circuits	2	2	3	20%	30%	50%
<b>5</b>	<b>Electromagnetic Induction and inductors</b>	<b>8</b>	<b>15</b>				
5.1	Production of induced EMF and current, Faraday's Laws of Electromagnetic Induction, Lenz's Law, Ampere circuital law.	1	2	2,3	40%	30%	30%
5.2	Statically & Dynamically Induced EMF, self-inductance, mutual inductance, coupling coefficient, Fleming's left-hand rule.	2	3	2,3	40%	30%	30%
5.3	BH curve, energy stored in a magnetic field,	1	2	2,3	40%	30%	30%
5.4	Types of inductors: On basis of core type and shapes. Air core, Iron core, Toroidal, solenoid	2	3	2,3	40%	30%	30%
5.5	Inductor in series and parallel,	1	3	2,3	40%	30%	30%
5.6	Transformer: Principle and types (Step up and Step down).	1	2	2,3	40%	30%	30%
<b>6</b>	<b>Electrostatics and Capacitance</b>	<b>8</b>	<b>15</b>				
6.1	Static Electricity: Absolute and Relative Permittivity, Electrostatic laws and electric field	2	4	1	30%	30%	40%
6.2	Electric Flux, Electric Flux Density and Electric field Strength	3	4	1	30%	30%	40%



6.3	Capacitance, unit of capacitance, dielectric strength, energy stored in capacitor, parallel plate and cylindrical capacitor with working (no derivation). Charging and discharging of capacitor and time constant.	3	4	1,3	30%	30%	40%
6.4	Types of Capacitors and different methods to read value of capacitors.	2	3	1,3	30%	30%	40%

Legends: R- Remember, U – Understand, A – Apply and above levels (Blooms’s Revised Taxonomy).

## V. LIST OF PRACTICALS/ASSIGNMENTS/TUTORIALS

Sr. No.	Unit	Practical/Assignment/Tutorial Title	No. of Hours	Relevant COS
1	2	Investigate DMM (Digital Multimeter) functionality.	1	1
2	2	Determine resistor values using color code method and DMM.	1	1,2
3	2	Analyze Series-Parallel Circuits to determine equivalent resistance.	2	2,3
4	2	Validate voltage division rule.	2	2,3
5	2	Confirm Current division rule.	2	2,3
6	2	Experiment to validate Ohm's law.	2	2,3
7	3	Assess various types of capacitors to determine their values.	2	1,2,3
8	3	Calculate equivalent capacitance of Series-Parallel Circuits.	2	1,2,3
9	5	Examine diverse types of inductors.	1	1,2
10	3	Identify charging and discharging patterns of capacitors and calculate time constants.	2	2,3
11	5	Measure inductance of standard-shaped coils (Solenoid and Torrid).	2	2,3

## VI. SUGGESTED SELF LEARNING ASSIGNMENTS/MICROPROJECT/ACTIVITIES

### Assignments

- Collect examples based on real world applications of resistor, capacitor & inductor and prepare a pdf file.



## ASSESSMENTS METHODOLOGIES /TOOLS

### Formative assessment (Assessment for Learning)

- Tutorials
- Midterm Test Exam
- Self-learning
- Term Work
- Seminar/Presentation

### Summative Assessment (Assessment of Learning)

- End Term Exam
- Micro-project/Assignments
- Tutorial Performance

## VII. SUGGESTED COS-POS MATRIX FORM

Course Outcomes (COs)	Programme Outcomes (POs)							Programme Specific Outcomes* (PSOs)		
	PO-1 Basic and Discipline Specific Knowledge	PO-2 Problem Analysis	PO-3 Design/ Development of Solutions	PO-4 Engineering Tools	PO-5 Engineering Practices for Society, Sustainability and Environment	PO-6 Project Management	PO-7 Life Long Learning	PSO-1	PSO-2	PSO-3
CO1	3	1	-	1	-	-	1	1	0	1
CO2	3	2	-	1	1	-	1	1	2	0
CO3	3	2	-	1	-	-	1	1	2	0

Legends :- High:03, Medium:02, Low:01, No Mapping: - 0

## VIII. SUGGESTED LEARNING MATERIALS TEXTBOOKS/REFERENCE BOOKS/WEBSITES

Sr. No	Author	Title	Publisher
1	B L Theraja, A K Theraja	Electrical Technology	S Chand and Company Limited. Volume 1
2	D. P. Kothari, I. J. Nagrath	Basic Electrical Engineering	TMH
3	J B Gupta	Basic Electrical Engineering	S K Katariya and sons





Sr. No	Author	Title	Publisher
4	Vincent Del Toro	Electrical engineering Fundamentals	PHI
5	D P Kothari, Mahima Jain, Shefali Jagwani	Electrical and Electronics Materials	Alpha Science International Limited,15

#### LEARNING WEBSITES & PORTALS

Sr. No.	Link/Portal	Description
1	<a href="https://www.hansrajcollege.ac.in/hCPanel/uploads/elearning/elearning_document/bsc-2nd_year_unit-2.pdf">https://www.hansrajcollege.ac.in/hCPanel/uploads/elearning/elearning_document/bsc-2nd_year_unit-2.pdf</a>	Electrical Circuits & network Skills
2	<a href="https://www.electronicshub.org/introduction-to-transformers/">https://www.electronicshub.org/introduction-to-transformers/</a>	Basics of Transformer
3	<a href="https://nptel.ac.in/courses/108105112">https://nptel.ac.in/courses/108105112</a>	NPTEL Study Materials
4	<a href="https://www.electrical4U.com">https://www.electrical4U.com</a>	All about Electrical Circuits

  
Curriculum Coordinator

  
Head of the Department

  
Dean Diploma

BOS VJTI Approval Dt. 01/08/2023



<b>DIPLOMA PROGRAMME</b>	: DIPLOMA IN ELECTRONICS ENGINEERING
<b>PROGRAMME CODE</b>	: DEInE
<b>SEMESTER</b>	: FIRST
<b>COURSE TITLE</b>	: ENGINEERIN GRAPHICS
<b>COURSE CODE</b>	: 234ME15

### I. TEACHING AND EXAMINATION SCHEME:

TEACHING SCHEME				EXAMINATION SCHEME												
CL	TL	LL	CR	PAPER HRS	TH		IST	TOTAL		FA-PR		SA-PR (PR/OR)		SLA		TOTAL MARKS
					Max	Min		Max	Min	Max	Min	Max	Min			
2	0	4	3	-	-	-	-	-	-	25	10	25	10	50	20	100

### II. RATIONALE

- To understand geometry of shapes, drawing conventions, definitions and drawing procedures.
- To imagine shapes of solid objects in three dimensions and draw their different views.
- To imagine internal details of solid objects from given views and use of drawing conventions.

### III. COURSE OUTCOMES:

Student should be able to

CO1	Understand geometry of shapes, drawing conventions, definitions and drawing procedures.
CO2	Imagine shapes of solid objects in three dimensions and draw their different views.
CO3	Imagine internal details of solid objects from given views and use of drawing conventions.
CO4	Understand computer aided drafting tool and capable to draw Sectional as well as non-Sectional Orthographic Projections.

### Course Content:

SECTION - I							
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level
1	<b>Introduction to Engineering Drawing</b>						
1.1	Drawing Instruments & their uses	1		1	50 %	50 %	



	1.2	Letters & Numbers (Single stroke Vertical)	1		1	50 %	50 %	
	1.3	Convention of Lines & it's applications	1		1	50 %	50 %	
	1.4	Geometrical Constructions	1		1	50 %	50 %	
2		<b>Orthographic Projections</b>						
	2.1	Planes of Projections – HP, VP & PP Orthographic Projections of Points.	1		1	50 %	50 %	
	2.2	Orthographic Projections of simple machine parts.	2	15	1		50 %	50 %
3		<b>Pictorial Views-</b>						
	3.1	Isometric Projections and Isometric Views. (No problems with slots on inclined surfaces)	3	10	2		50 %	50 %
<b>SECTION - II</b>								
<b>Unit &amp; Sub-Unit</b>	<b>Topics/Sub-topics</b>		<b>Hours</b>	<b>Marks</b>	<b>CO</b>	<b>R Level</b>	<b>U Level</b>	<b>A Level</b>
4	<b>Sectional Orthographic Projections</b>							
	4.1	Sectional Orthographic Projections of simple machine parts.(Full Section in one view)	6	25	3		50 %	50 %
5	<b>Computer aided Drafting</b>							
	5.1	Demonstration & practice of drafting software to the students.	2		4		50 %	50 %
<b>Legends: R- Remember, U – Understand, A – Apply and above levels (Blooms's Revised Taxonomy).</b>								

*Notes: This specification table shall be treated as a general guideline and actual distribution of marks may slightly vary from table. But the questions from each topic should be asked as per marks weightage. Numerical questions are to be asked only if specified.*

**List of Practicals/Assignments/Tutorials:**

The students should workout the problems on the following topics preferably on quarter imperial drawing sheets during the practicals.

Sr. No.	Unit	Practical/Assignment	Approx. Hours	CO
1	1	One sheet on types of lines and its application	2	1
2	1	One sheet on Letters and Numbers	2	1



3	1	One sheet on Geometrical Construction	4	1
4	2	Four sheets on Orthographic Projections.	09	2
5	4	Four sheets on Sectional Orthographic Projections.	15	3
6	3	Four sheets on Isometric Projections.	9	2

**Text Books:**

Sr. No.	Author	Title	Publisher and Edition
1	N D Bhatt	Engineering Drawing	Charotar Publishers, 49 <sup>th</sup> Edition 2010
2	S T Ghan, M V Rawalani	Engineering Graphics & Engineering	Nirali Publications-seventh Edition - 2009

**Reference books and Websites:**

Sr. No.	Author	Title	Publisher and Edition
1	D.A.Jolhe	Engineering Drawing	TATA McGraw Hill- 2008
2	K.R.Mohan	Engineering Graphics	Dhanpatrai publishing co.-I <sup>st</sup> edition- 2009

  
Curriculum Coordinator

  
Head of the Department

  
Dean Diploma



DIPLOMA PROGRAMME	: DIPLOMA IN ELECTRONICS ENGINEERING
PROGRAMME CODE	: DELNE
SEMESTER	: FIRST
COURSE TITLE	: COMPUTER PROGRAMMING
COURSE CODE	: 234EX16

### I. TEACHING AND EXAMINATION SCHEME

TEACHING SCHEME					EXAMINATION SCHEME														
CL	TL	LL	Self-learning	CR	PAPER HRS	FA-TH (MST)		SA-TH (ESE)			TOTAL		Based on LL & TL Practical				Based on Self-learning		TOTAL MARKS
						Max	Min	Max	Min	Max	Min	FA-PR (CA)		SA-PR (PR/OR)		SLA			
												Max	Min	Max	Min	Max	Min		
1	2	2	2	3.5	-	-	-	-	-	-	-	25	10	50	20	25	10	100	

### II. RATIONALE

To teach students basic facts, concepts and principles of C programming as a tool to analyze engineering problems. To make students well versed in the prerequisites for further studies in electronics engineering.

### III. COURSE OUTCOMES (COS)

Students will be able to achieve the following COS on completion of course based learning

CO1- Basics of C language such as declaration initialization of variables data types.

CO2 - Develop debug and edit programs.

CO3 - Analyze / understand logical structure of a computer program and Interpret program output.

### IV. COURSE CONTENTS WITH SPECIFICATION TABLE

SECTION – I							
Unit & Sub Unit	Topic	Hours	Marks	COS	R Level	U Level	A Level
1	Introduction of C language	6					
1.1	Introduction to Programming & History of C.	1		1	60%	20%	20%
1.2	Data Structure, character set, Data types,	2		1	20%	50%	30%



	Variables Constant. (Basic data types (integers, floating point numbers, characters), variables and constants, type casting						
1.3	Arithmetic Expression, Declaring Variables and Data type conversion. (Arithmetic, comparison, logical, bitwise operators, expressions).	1		1	20%	50%	30%
1.4	Introduction of Flowchart and algorithm	1		2	20%	40%	40%
1.5	Basic Input Output – Input Output statement using printf (), scanf (), Character input output statement. Input output formatting, Use of comments	1		1	50%	25%	25%
<b>2</b>	<b>Decision making and Branching</b>	<b>6</b>					
2.1	Rational and Logical operators, Looping Control Statements Decision-making using if/else, switchstatements, loops (for, while, do-while)	4		2	20%	60%	20%
2.2	Use of Break and Continue statement.	1		2	20%	60%	20%
2.3	The switch statement	1		2	20%	60%	20%
<b>3</b>	<b>Array and Strings</b>	<b>6</b>					
3.1	Array declaration and initialization, Characteristics of an Array, One-dimensional and multi-dimensional arrays	4		2,3	20%	60%	20%
3.2	String declaration and initialization of string variables, string handling library strlen(), strcpy(), strcat(), strcmp().	2		2	20%	60%	20%

### SECTION – II

Unit & Sub Unit	Topic	Hours	Marks	COS	R Level	U Level	A Level
4	Functions	5					



4.1	Concept and need of function, Library function: Math function, String handling and other miscellaneous function, writing user define function, scope of variables, Parameter passing: call by value, call by reference	3		1,2,3	20%	60%	20%
4.2	Category of function: No argument No return value, No argument with return value, No argument with return value, recursion, command line arguments	2		1,2,3	20%	60%	20%
<b>5</b>	<b>Pointers</b>	<b>5</b>					
5.1	Concept of pointers: Declaring, initializing, accessing.	2		1,2,3	20%	60%	20%
5.2	Pointers arithmetic handling arrays using pointers, handling functions using pointers.	3		1,2,3	20%	60%	20%
<b>6</b>	<b>Structure</b>	<b>4</b>					
6.1	Defining structure, declaring and accessing structure members.	2		1,2,3	20%	60%	20%
6.2	Initialization of structure, arrays of structure	2		1,2,3	20%	60%	20%

#### V. LIST OF PRACTICALS/ASSIGNMENTS/TUTORIALS

Sr. No.	Practical/Assignment/Tutorial Title	No. of Hours	Relevant COS
1	To print any character line '\$' or our college name on output window.	2	1
2	Write/compile/execute simple C program: using constant, variables, arithmetic expression	2	1,2
3	Write/compile/execute simple C program: increment, decrement operator, exhibiting data type converter.	2	1,2
4	Write/compile/execute simple C program: To convert temperature Fahrenheit degrees to Centigrade degrees	2	1,2
5	Write/compile/execute simple C program: To calculate the area and perimeter of the rectangle, circumference, and area of the circle.	2	1,2
6	Decision making and branching using: if-else structure.	2	1,2
7	To Find the greatest and smallest of the given three numbers.	2	1,2
8	Using switch statement write a program	2	1,2
9	To display all even and odd numbers from 0-100.	2	1,2
10	Write a program to find Fibonacci series	2	1,2
11	Write a program to demonstrate concept of Array	2	1,2,3
12	Write a program to demonstrate concept of structures.	2	1,2,3
13	Write a program using string Library Functions.	2	1,2,3
14	Write a program using User define Function.	2	1,2,3



15	Write a program using Pointers.	2	1,2,3
16	Write a program of given array using Pointers	2	1,2,3

## VI. SUGGESTED SELF LEARNING ASSIGNMENTS/MICROPROJECT/ACTIVITIES

### Assignments

- Develop C language code for relevant topics suggested by teacher.
- Solve an assignment on any relevant topic given by teacher.

### Micro Project (if any)

- Develop some simple real-world applications projects.

## ASSESSMENTS METHODOLOGIES /TOOLS

### Formative assessment (Assessment for Learning)

- Experiments performance and journal completion.
- Class Test
- Self-learning
- Term Work
- Seminar/Presentation

### Summative Assessment (Assessment of Learning)

- End Term Exam
- Micro-project.
- Assignments.

## VII. SUGGESTED COS-POS MATRIX FORM

Course Outcomes (COs)	Programme Outcomes (POs)							Programme Specific Outcomes* (PSOs)		
	PO-1 Basic and Discipline Specific Knowledge	PO-2 Problem Analysis	PO-3 Design/ Development of Solutions	PO-4 Engineering Tools	PO-5 Engineering Practices for Society, Sustainability and Environment	PO-6 Project Management	PO-7 Life Long Learning	PSO-1	PSO-2	PSO-3
CO1	3	-	-	3	-		2	3	1	1
CO2	3	2	1	3	1	1	2	3	1	1
CO3	3	2	3	3	-	1	1	3	1	3

Legends :- High:03, Medium:02,Low:01, No Mapping: - 0





### VIII. SUGGESTED LEARNING MATERIALS TEXTBOOKS/REFERENCE BOOKS/WEBSITES

Sr. No	Author	Title	Publisher
1	Balaguruswamy	Programming in C	Tata McGraw-Hill Publishing Limited
2	Yashwant P Kanetkar	Let us 'C'	BPB Publication
3	Herbert Schildt	The complete reference C	McGraw-Hill, Osborne Media

### LEARNING WEBSITES AND PORTALS.

SR NO	LINK /PORTAL	DESCRIPTION
1	<a href="https://nptel.ac.in/courses/106104128">https://nptel.ac.in/courses/106104128</a>	C Programming
2	<a href="https://jsommers.github.io/cbook/control.html">https://jsommers.github.io/cbook/control.html</a>	Control structures, flow control statements inC
3	<a href="https://www.learn-c.org/en/Functions">https://www.learn-c.org/en/Functions</a>	Functions
4	<a href="https://www.programiz.com/c-programming">https://www.programiz.com/c-programming</a>	C Programming
5	<a href="https://www.javatpoint.com/c-programming-language-tutorial">https://www.javatpoint.com/c-programming-language-tutorial</a>	C Programming tutorial

  
Curriculum Coordinator

  
Head of the Department

  
Dean Diploma

BOS VJTI Approval Dt. 01/08/2023



DIPLOMA PROGRAMME	: DIPLOMA IN MECHANICAL ENGINEERING
PROGRAMME CODE	: DELNE
SEMESTER	: FIRST
COURSE TITLE	: YOGA AND STRESS MANAGEMENT
COURSE CODE	: 234EX17

**TEACHING AND EXAMINATION SCHEME:**

TEACHING SCHEME						EXAMINATION SCHEME												
CL	TL	LL	Self-learning	CR	PAPER HRS	FA-TH (MST)	SA-TH (ESE)			TOTAL		Based on LL & TL				Based on Self-learning		TOTAL MARKS
							Max	Min	Max	Min	Practical		SLA					
											FA-PR (CA)	SA-PR (PR/OR)	Max	Min	Max	Min		
-	-	1	1	1	--	-	-	-	-	-	25	10	-	-	25	10	50	

**Course Objectives:**

- Diploma Graduate needs a sound body and mind to face the challenging situations in career as employee or as an entrepreneur.
- Yoga and Meditation brings about the holistic development of an individual and equips with necessary balance to handle the challenges.
- Yoga inculcates discipline in all walks of the life of student. Pranayama practice regulates breathing practices of the student to improve stamina, resilience. Meditation empowers a student to focus and keep calm to get peace of mind.
- This course for Diploma students is designed for the overall wellbeing of the student and aims to empower students to adopt and practice "Yoga" in daily life.

**Course Outcomes:**

Student should be able to

CO1	Practice basic Yoga and Pranayama in daily life to maintain physical and mental fitness.
CO2	Practice meditation regularly for improving concentration and better handling of stress and anxiety.
CO3	Follow healthy diet and hygienic practices for maintaining good health.



**Course Content:**

SECTION - I							
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level
1	<p><b>Introduction on Introduction to Yoga</b></p> <p>Perform warming up exercises to prepare the body from head to toe for Yoga.</p> <p><b>Practice Surya Namaskar</b></p> <p>Perform all the postures of Surya Namaskar one by one in a very slow pace, after warm up.</p>	04	--	1,2,3	40%	40%	20%
2	<p><b>Practice basic Asanas</b></p> <p>Perform Sarvangasna, Halasana, Kandharasana (setubandhasana)</p> <p>Perform Bhujangasana, Naukasana, Mandukasana.</p> <p>Other asanas guided by expert</p>	04	--	1,2,3	30%	30%	40%
SECTION - II							
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level
3	<p><b>Practice basic pranayama</b></p> <p>Perform Bhastrika, Anulom Vilom Pranayam Kriya</p> <p>Practice Kapalbhata Pranayam Kriya</p>	04	--	1,2,3	30%	30%	40%
4	<p><b>Practice meditation</b></p> <p>Perform sitting in Dhyan Mudra and meditating. Start with five minute and slowly increasing to higher durations.</p> <p>( Trainer will explain the benefits of Meditation before practice )</p>	04	--	1,2,3	30%	30%	40%
<p><b>Legends:</b> R- Remember, U – Understand, A – Apply and above levels (Blooms’s Revised Taxonomy).</p>							



**Text Books:**

Sr. No.	Author	Title	Publisher and Edition
1.	Swami Vivekananda	Patanjalis Yoga Sutras	Fingerprint Publishing (2023) Prakash Books India Pvt Ltd, New Delhi
2.	Luisa Ray, Angus Sutherland	Yoga for Every Body: A beginner's guide to the practice of yoga postures, breathing exercises and me	Vital Life Books (2022)

  
Curriculum Coordinator

  
Head of the Department

  
Dean Diploma



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