



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

(Central Technological Institute, Maharashtra State, INDIA)

H. R. Mahajani Marg, Matunga, Mumbai 400019

Tel.No. +91 22 24198101-02 Fax: +91 22 24102874

Website: www.vjti.ac.in

PROGRAMME NAME: DIPLOMA IN TEXTILE ENGINEERING

With Effect From Academic Year : 2023-24

Duration : 16 Weeks

Scheme : R-2023

: DTE

: 6 Semester

: First

Programme Code

Duration of Programme

Semester

Sr No	Course Title	Abbreviations	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	FA-TH (MST)	SA-TH	Total	FA (CA)	SA (PR/OR)		SLA	Max	Min				
						4	2	2	Max			Min										Max	Min	Max	Min
						6	2	2	8			4	3	30	70	28	100		40	25	10	25	10		
1	MATHEMATICS-I	MA-I	AEC	236MA11a	6	4	2	-	2	8	4	3	30	70	28	100	40	25	10	25	10	150			
2	CHEMISTRY	CHE	AEC	236CHI2	2	3	-	2	1	6	3	3	30	70	28	100	40	25	10	25@	10	25	10	175	
3	COMMUNICATION SKILLS (ENGLISH)	CS	SEC	236HM13	-	3	-	2	1	6	3	3	30	70	28	100	40	25	10	-	-	25	10	150	
4	FABRIC STRUCTURE-I	FS-I	DSC	236TE14	2	3	2	-	1	6	3	3	30	70	28	100	40	25	10	-	-	25	10	150	
5	CAD/CAM IN TEXTILES	CD	DSC	236TE15	2	1	-	4	2	7	3.5	-	-	-	-	-	-	-	25	10	50@	20	25	10	100
6	ENGINEERING GRAPHICS	EG	AEC	236ME16	2	1	-	4	-	5	2.5	-	-	-	-	-	-	50	20	50@	20	-	-	100	
7	YOGA AND STRESS MANAGEMENT	YSM	VEC	236TE17	1	-	-	1	1	2	1	-	-	-	-	-	-	25	10	-	-	25	10	50	
Total					15	15	4	13	8	40	20	400	120	280	400	200	125	150	150	875					

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

(Signature)
Curriculum Coordinator

(Signature)

Head Diploma in Textile Engineering



(Signature)
Dean - Diploma

DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE ENGINEERING
PROGRAMME CODE	: DTE
SEMESTER	: FIRST
COURSE TITLE	: MATHEMATICS – I
COURSE CODE	: 236MA11a

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	FA-PR (CA)		SA-PR (PR/OR)		SLA			
											Max	Min	Max	Min	Max	Min		
4	2	-	2	4	3	30	70	28	100	40	25	10	-	-	25	10	150	

Total IKS Hrs for Semester: 6Hrs

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, *# Online Examination, @\$ Internal Online Examination

Course Category: Discipline Specific Course Core (DSC): 3, 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

RATIONALE

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



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 and Use derivatives to solve the engineering problems.
- CO4 – Find equation of straight line, under given conditions.

COURSE CONTENTS WITH SPECIFICATION TABLE

SECTION - I								
Unit & Sub-Unit	Topics/Subtopics	Hours	Marks	COs	R Level	U Level	A Level	
1		Determinants	6	7	1	40%	40%	20%
	1.1	Determinants of order two and three. Properties of determinants Cramer's rule.						
2		Matrices	8	10	1	40%	40%	20%
	2.1	Transpose of a matrix, identity matrix						
	2.2	Addition and subtraction of matrices, multiplication of matrices						
	2.3	Adjoint of a matrix, inverse of a matrix using adjoint.						
	2.4	Solution of simultaneous linear equations by adjoint method (containing two unknowns)						
3		Straight Lines	4	6	4	40%	40%	20%
	3.1	Equations of straight lines in different forms: Two points form, slope y-intercept form, angle point form.						
	3.2	Angle between two straight lines.						
4		Function	6	6	3	40%	40%	20%
	4.1	Definition of function.						
	4.2	Logarithms and properties, composite functions.						
	4.3	Simple problems based on function						
5		Limits	6	6	3	40%	40%	20%
	5.1	Concept of limit of a function. Theorems on limits (Without proof)						



	5.2	Limits of algebraic functions.						
	5.3	$\lim_{x \rightarrow 0} \frac{\sin x}{x}$, simple problems						
6		Indian Knowledge System Information about Ancient Indian Mathematicians	6					

SECTION - II

Unit & Sub-Unit	Topics/Subtopics	Hours	Marks	COs	R Level	U Level	A Level
7	Trigonometry	18	20	2	40%	40%	20%
7.1	Circular measure, Conversion from degrees to radians and radians to degrees.						
7.2	Trigonometric ratios of angles in 4 quadrants.						
	Trigonometric identities						
	Trigonometric ratios of negative angles						
7.3	Compound angle formulae.						
7.4	Allied angle formulae.						
7.5	Factorization and de-factorization formulae.						
7.6	Multiple, submultiples angle formulae.						
7.7	Inverse trigonometric functions, definition, simple problems						
8	Derivatives	10	15	3	40%	40%	20%
8.1	First principle, geometrical interpretation						
8.2	Derivatives of standard functions						
8.3	Theorems of derivatives. Simple problems						
8.4	Derivative of composite function. (Chain rule).						
8.5	Derivative of implicit function, parametric function.						

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



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, sub-multiple 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	4

ASSESSMENTS METHODOLOGIES /TOOLS:

Formative assessment (Assessment for Learning)

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

Summative Assessment (Assessment of Learning)

- End Semester Examination.

SUGGESTED SELF LEARNING ASSIGNMENTS/MICROPROJECT/ACTIVITIES

- Activities to help students remember formulae. Two tests based directly only on formulae.
- Find applications in engineering where one or more above concepts are used.



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	2	1	1	1	-	-	1	1	-
CO2	2	1	1	1	-	-	1	1	-
CO3	2	1	1	1	-	-	1	1	-
CO4	2	1	1	1	-	-	1	1	-

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.

SUGGESTED LEARNING MATERIALS TEXTBOOKS/REFERENCE BOOKS/WEBSITES:

Sr. No	Author	Title	Publisher
1	B. M. Patel, J. M. Rawal	Applied Mathematics	NiraliPrakashan
2	S. P. Deshpande	Mathematics for Polytechnic	Pune VidyarthiGrihaPrakashan.
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

BOS VJTI Approval dated 1/8/2023



DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE ENGINEERING
PROGRAMME CODE	: DTE
SEMESTER	: FIRST
COURSE TITLE	: CHEMISTRY
COURSE CODE	: 236CH12

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	FA-PR (CA)		SA-PR (PR/OR)		SLA			
											Max	Min	Max	Min	Max	Min	Max	
3	-	2	1	3	3	30	70	28	100	40	25	10	25@	10	25	10	175	

Total IKS Hrs for Semester: 2 Hrs

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, *# Online Examination, @\$ Internal Online Examination

Course Category: Discipline Specific Course Core (DSC): 3, 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

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.



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 organic compounds & titrations for concentration determination.
- CO2 – Apply the knowledge of polymers and lubricants and various water softening and corrosion protection methods in engineering applications.
- CO3 – Demonstrate safe and proper use of chemicals, glass wares and equipment's through laboratory experiment.

COURSE CONTENTS WITH SPECIFICATION TABLE

SECTION - I									
Unit & Sub-Unit	Topics/Subtopics	Hours	Marks	CO	R Level	U Level	A Level		
1	Atomic Structure and Chemical Bonding	8	13	1	40%	40%	20%		
	1.1	Definitions of Elements, atoms, 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, Pauli's exclusion principle (till 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, formation of various types of chemical bonds: Covalent, Ionic,							



		Coordinate covalent bonds along with examples CH ₄ , H ₂ , O ₂ , N ₂ , NaCl, MgCl ₂ , H ₃ O ⁺ , NH ₄ ⁺ , BF ₃ -NH ₃						
2		Solution and Acid Base & Salt	8	10	1	40%	40%	20%
	2.1	Solution, Concentrations of solution: Grams per litre, Percentage by weight or volume, Normality, Molarity, Molality, Numericals,						
	2.2	Volumetric analysis, Titrations, Acid base titration, Redox titration						
	2.3	Definitions of acids & bases, Arrhenius theory,						
	2.4	pH, pOH, pH scale, Basicity of an acid and acidity of a base, Definition of salt with examples.						
3		Water	08	12	2	40%	40%	20%
	3.1	Introduction, Hard and soft water, hardness and its determination (EDTA method only), Hard water treatment methods: Lime – Soda process, Zeolite Permutit method, Ion exchange method and comparison of methods.						
	3.2	boiler problems-scale, sludge their causes and prevention methods, Environmental sustainability, Waste water and effluent water treatment,						
SECTION - II								
Unit & Sub-Unit	Topics/Subtopics		Hours	Marks	CO	R Level	U Level	A Level
4	Corrosion		8	10	2	40%	40%	20%



	4.1	Introduction, Types of corrosion (dry and wet corrosion), factors affecting the corrosion,						
	4.2	Protective measures against corrosion: Coatings (galvanic and zinc, organic coating agents, Electroplating, Metal cladding,).						
5		Organic Chemistry	8	12	1	40%	40%	20%
	5.1	Introduction: Types of chemistry, Catenation property of Carbon element, Organic compounds, its properties and applications, Classification: by structure and functional group,						
	5.2	Alkanes, alkenes, alkyenes, Azo compounds: Definition, General formula, Names and structure of first five members, Isomerism.						
6		Polymers and Lubricants	8	13	2	40%	40%	20%
	6.1	Polymer, Monomer, classification of polymers, Polymerisation, Addition and condensation polymerisation						
	6.2	definition, types of: thermosetting & thermo softening polymers, Identification of polymers and viscosity property.						
	6.3	Lubricant, Lubrication, Function of lubricant, Types of lubricants,						
	6.4	Ideal lubricant and properties: Viscosity, Viscosity index, cloud point, Saponification value.						
Legends: R- Remember, U – Understand, A – Apply and above levels (Blooms’s Revised Taxonomy).								



LIST OF PRACTICALS/ASSIGNMENTS/TUTORIALS

Sr. No.	Practical/Assignment/Tutorial Title	No. of Hours	Relevant COs
1	To identify pH of unknown solution and identify acid, base and neutral solutions from the given set of solutions.	2	1 & 3
2	To standardize HCl solution using N/10 Na ₂ CO ₃ .	2	1 & 3
3	To standardize KMnO ₄ solution using N/10 C ₂ H ₂ O ₄ solution.	2	1 & 3
4	To estimate of hardness of water by EDTA complexometric titration	2	2 & 3
5	To estimate amount of chloride in tap water by Mohr's Method	2	2 & 3
6	To determine Saponification value of an oil	2	2 & 3
7	To determine the viscosity of a polymer	2	2 & 3
8	To determine relative viscosity of given oil.	2	2 & 3

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
- Tutorial Performance



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	3	2	1	-	1	-	2	3	1
CO2	3	3	2	-	1	-	1	3	3
CO3	3	3	2	-	1	-	1	3	2

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.

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: (2017)
4	Jain & Jain	Engineering Chemistry	Dhanpat Rai & Co. (Pvt.) Delhi – 110006 Ltd. Edition: (2017)
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 (2014)

LEARNING WEBSITES & PORTALS



Sr.No	Link / Portal	Description
1	www.onlinelibrary.wiley.com	Concepts of basic chemistry
2	https://www.chem1.com	Chemistry instruction and education


Curriculum Coordinator


Head of the Department


Dean Diploma

BOS VJTI Approval dated 1/8/2023



DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE ENGINEERING
PROGRAMME CODE	: DTE
SEMESTER	: FIRST
COURSE TITLE	: COMMUNICATION SKILLS (ENGLISH)
COURSE CODE	: 236HM13

I. TEACHING AND EXAMINATION SCHEME

TEACHING SCHEME					EXAMINATION SCHEME												
C L	T L	L L	Self - lear ning	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	FA-PR (CA)		SA-PR (PR/OR)		SLA		
						Max					Min	Max	Min	Max	Min	Max	
3	-	2	1	3	3	30	70	28	100	40	25	10	-	-	25	10	150

Total IKS Hrs for Sem: 0Hrs

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, *# Online Examination, @\$ Internal Online Examination

Course Category: Discipline Specific Course Core (DSC): 3, Discipline Specific Elective (DSE): 0, Value Education Course (VEC): 1, Internship/Apprentice/Project/Community (INP): 0, Ability Enhancement Course (AEC): 2, Skill Enhancement Course (SEC): 2, Generic Elective (GE) : 0

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 student 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	Emanating Voices- textbook I		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	2					
	1.3	Appro JRD - Sudha Murthy	2					
2		Igniting Minds- textbook II		8	CO3	40%	40%	20%
	2.1	What Teenagers Need to Know about Cyber security- Sanjay Goyal	2					
	2.2	India What can it teach us?-Max Muller	2					
3		<p>Written and spoken communication in English</p> <ul style="list-style-type: none"> • English in use • English for routine communicative function • English in common interactive situations • Speech in practice • Paragraph writing • Essay writing • Application letters as per the Industrial situation • Critical Analysis • Power Point presentation based on texts as well as drawing parallels from industry 	6	9	CO1	40%	40%	20%



	3.1	Grammar and sentence formation <ul style="list-style-type: none"> • Use of technical vocabulary • Verbs kinds and Uses • Tenses kinds and uses • Subject-verb agreement • Active passive voice • Prepositions • Types of sentences 	8	8	CO1			
SECTION - II								
Unit & Sub-Unit	Topics/Subtopics	Hours	Marks	COs	R Level	U Level	A Level	
4	Grammar and sentence formation <ul style="list-style-type: none"> a) Use of technical vocabulary b) Verbs kinds and Uses c) Tenses kinds and uses d) Subject-verb agreement e) Active passive voice f) Prepositions g) Types of sentences h) One word Substitution 	3	5	CO2	20%	40%	40%	



4.1	<p>Short composition</p> <p>Paragraph writing</p> <p>Coherence</p> <p>Correct grammar</p> <p>Good vocabulary</p> <p>Creative Writing</p> <p>Proper structure</p> <p>Description of an object or a product or a situation-use of technical words</p> <p>Development of ideas</p> <p>developing a story/ poetry/ paragraph</p>	6	10	CO1	30%	50%	20%
4.3	<p>Comprehension passage</p> <p>a) Summarization of passages in own words.(Newspaper articles, general articles etc.)</p> <p>b) Identifying the theme of the passage precisely and enumerating the sub-points</p>	3	5	CO2			
4.4	<p>Vocabulary Building</p> <p>a) Synonyms</p> <p>b) Antonyms</p> <p>c) Homophones</p> <p>d) One-word substitute</p> <p>e) Homonyms</p>	6	5	CO1			



5		A) 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	3	5	CO1	40%	40%	20%
6	6.1	Use of refined language a) Idioms b) Proverbs c) Phrases d) Quotations	3	5	CO2	40%	40%	20%
		TOTAL	48	70				

Legends: R- Remember, U – Understand, A – Apply and above levels (Blooms’ 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	2	3	2	-	2	-	2	2	2



CO2	2	3	2	-	2	-	2	2	2
CO3	2	3	2	-	2	-	2	2	2

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.

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 (Book I)	Orient BlackSwan, 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 BlackSwan, First edition, 2021

LEARNING WEBSITES & PORTALS

Sr.No	Link / Portal	Description
1	https://www.britishcouncil.in/english/learn-online	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	grammarly.com/blog	For constructing effective paragraphs and improving clarity
5	www.newagegolden.com	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



DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE ENGINEERING
PROGRAMME CODE	: DTE
SEMESTER	: FIRST
COURSE TITLE	: FABRIC STRUCTURE-I
COURSE CODE	: 236TE14

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		
3	2	-	1	3	3	30	70	28	100	40	25	10	-	-	25	10	150			

Total IKS Hrs for Sem.: 2 Hrs

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, *# Online Examination, @\$ Internal Online Examination

Course Category: Discipline Specific Course Core (DSC): 3, Discipline Specific Elective (DSE): 0, Value Education Course (VEC): 1, Internship/Apprentice/Project/Community (INP):0, Ability Enhancement Course (AEC): 2, Skill Enhancement Course (SEC): 2, Generic Elective (GE): 0

II. RATIONALE

Fabric Structure has a significant role in the manufacture of Woven Textiles. The structure of a fabric influences the properties of the fabric. Woven fabric is manufactured by the interlacement of vertical and horizontal threads (yarn) known as warp and weft respectively. The subject of Fabric Structure fosters the development of creative thinking, problem-solving abilities and enhances abstract thinking. Students acquire logical reasoning, problem-solving techniques and analytical thinking, which are valuable for lifelong learning and professional growth.

By engaging in the subject of Fabric Structure, students learn to represent complicated 3D structures on a 2D point paper using imaginative skills. The students are able to express and communicate the structures



in an effective manner for the production of fabrics on the machines known as looms. The students represent the steps and functions involved in the manufacture of fabrics through simple designs, cross sectional diagrams, draft, peg plans and denting order on a point paper. The students are equipped with the ability to analyze fabrics and interpret information on a point paper, make informed decisions and navigate real-world situations. Fabric Structure provides a foundation for further studies in various other textile subjects and prepares the students to tackle complex challenges. By exploring abstract concepts and logical reasoning, students develop their ability to reason, make connections, and approach problems with clarity and precision.

Furthermore, studying Fabric Structure helps students appreciate the historical and cultural significance of Textiles and its applications in diverse fields, thereby fostering textile learning and a deeper understanding of the world of textiles. Hence the course provides the insight to analyze textile engineering problems scientifically using various tools and instruments like pick glass, measuring scale, weighing scale etc. By incorporating the topic of analysis of fabrics, students comprehend how to approach textile engineering problems from a mathematical perspective, enabling them to devise efficient and effective solutions and this leads to preparing Textile Diploma graduates, who are well-rounded, adaptable and capable of making significant contributions to the branch-specific problems.

III. COURSE OUTCOMES (COS)

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

- CO1 - Apply the primary and secondary motions of a loom to produce a fabric.
- CO2 - Represent the basic weaves and their derivatives, the cross-section, draft, peg plan and denting on point paper.
- CO3 - Use cross sectional diagrams and the different types of drafts and denting orders to modify the structures and properties of fabrics.
- CO4 - Represent the toweling and perforated weaves, the cross-section, draft, peg plan and denting on point paper.
- CO5 - Represent the cord structures and color and weave effects, the cross-section, draft, peg plan and denting on point paper.
- CO6 - Use the appropriate fabric structures for specific end applications to satisfy the application related requirements.

IV. COURSE CONTENTS WITH SPECIFICATION TABLE

SECTION - I								
Unit & Sub-Unit	Topics/Subtopics	Hours	Marks	COs	R Level	U Level	A Level	
1	Primary and Secondary Motions of a loom:	6	10	CO1	60%	20%	20%	
	1.1 Passage of warp through loom.							
	1.2 Function of shedding mechanism.							
	1.3 Function of picking mechanism.							



	1.4	Function of reed and beat-up on a loom.						
	1.5	Function of let-off and take-up on a loom.						
	1.6	Function of let-off and take-up on a loom.						
	1.7	Looms in the Indian Knowledge System: Weaving of fabrics (Handlooms of India).						
2		Representation of elementary weaves and their derivatives on a point paper.	10	16	CO2	13%	75%	12%
	2.1	Basic Weaves: 2.1.1 Construction of plain, twill and satin/sateen (regular and irregular) weaves.						
		2.2.2 Ornamentation of plain weave using colors, stripe and check effect, using different counts, materials, denting order, reeds, tension differences in warp, post loom processes like bleaching, dyeing, printing, finishing, raising. Some commercial fabrics like voile, muslin, poplin, chiffon, organdy, buckram, cheesecloth.						
		2.2.3 Some commercial twill fabrics like gabardine, drill, denim.						
	2.2	Derivatives of Plain and Twill weave:						
		2.2.1 Warp rib, weft rib and hopsack; their end uses and fabric specifications.						
		2.2.2 Elongated twill weave,, broken twill weave, rearranged, combination, zig zag and curved twill weave, herringbone weave, transposed weave, diamond and diaper weaves; their end uses and fabric specifications.						
		2.2.3 Crepe weave, end use and specifications.						
3		Influence of weaves on fabric properties:	8	9	CO3	11%	11%	78%
	3.1	Different types of drafts, peg plan, denting and drawing cross-sectional diagrams.						
	3.2	Comparison between different weaves.						
	3.3	The effects of weaves and fabric parameters on the properties of fabrics.						

SECTION - II



Unit & Sub-Unit	Topics/Subtopics	Hours	Marks	COs	R Level	U Level	A Level
4	Toweling and Perforated Weaves	6	10	CO4	30%	60%	10%
4.1	Toweling Weaves:						
	4.1.1 Construction of honeycomb weaves, draft, peg plan and denting order.						
	4.2.2 Construction of Brighton honeycomb weaves, draft, peg plan and denting order.						
	4.2.3 Construction of huckaback weaves , draft, peg plan and denting order.						
4.2	Perforated Weaves:						
	4.2.1 Construction of mock leno weaves, draft, peg plan and denting order.						
	4.2.2 Construction of distorted thread effect, draft, peg plan and denting order.						
5	Cord structures and Color and weave effects:	10	16	CO5	50%	38%	12%
5.1	Rib and Cord Structures:						
	5.1.1 Construction of Bedford cord and wadded structures, their cross sections, draft, peg plan and denting order.						
	5.1.2 Construction of Pique weaves, cross section, draft, peg plan and denting order.						
5.2	Color and Weave effects:						
	5.2.1 Construction of continuous effects, hound's tooth pattern, bird's eye, spot effects, hairline effects, step pattern and all over effects.						
6	Comparison between different fabric structures and the influence on fabric properties:	8	9	CO6	11%	11%	78%
6.1	Comparison between different types of toweling.						
6.2	Comparison between different types of perforated fabrics.						
6.3	Comparison between bedford cords, pique and their wadded structures.						
6.4	The effect of the weaves on the properties of the fabric.						



V. LIST OF PRACTICALS/ASSIGNMENTS/TUTORIALS

Sr. No.	Practical/Assignment/Tutorial Title	No. of Hours	Relevant COs
1	Study the passage of the loom and the functions of the primary and secondary motions of the loom.	2	CO1
2	Analysis of plain weave. Design, draft, peg plan, denting, epi, ppi, count, application.	2	CO2
3	Analysis of plain weave derivative-warp/weft rib. Design, draft, peg plan, denting, epi, ppi, count, application.	2	CO2
4	Analysis of plain weave derivative-matt/hopsack/basket weave. Design, draft, peg plan, denting, epi, ppi, count, application.	2	CO2
5	Analysis of twill weave. Design, draft, peg plan, denting, epi, ppi, count, application.	2	CO2
6	Analysis of twill weave derivative-pointed twill. Design, draft, peg plan, denting, epi, ppi, count, application.	2	CO2
7	Analysis of twill weave derivative- herringbone / broken / transposed twill. Design, draft, peg plan, denting, epi, ppi, count, application.	2	CO2
8	Analysis of diamond/diaper weave. Design, draft, peg plan, denting, epi, ppi, count, application.	2	CO2
9	Analysis of Sateen / Satin weave. Design, draft, peg plan, denting, epi, ppi, count, application.	2	CO2
10	Analysis of ordinary honeycomb weave. Design, draft, peg plan, denting, epi, ppi, count, application.	2	CO4
11	Analysis of Brighton honeycomb weave. Design, draft, peg plan, denting, epi, ppi, count, application.	2	CO4
12	Analysis of huckaback weave. Design, draft, peg plan, denting, epi, ppi, count, application.	2	CO4
13	Analysis of mock leno weave. Design, draft, peg plan, denting, epi, ppi, count, application.	2	CO4
14	Analysis of corded weave (bedford, pique). Design, draft, peg plan, denting, epi, ppi, count, application.	2	CO5
15	Analysis of any color and weave effect structure. Design, draft, peg plan, denting, epi, ppi, count, application.	2	CO5
	<p>Note :</p> <ol style="list-style-type: none"> 1. 15 tutorials are based on CO1, CO2, CO4, CO5. CO3 and CO6 are covered through self learning micro projects and assignments. 2. Tutorials shall be engaged in the batch size of 20 to 30 students. 3. Each Tutorial shall carry 1.5 marks each including half mark for timely completion of each tutorial. The remaining 2.5 marks are reserved for the complete and timely final submission at the end of the term. 		



VI.SUGGESTED SELF LEARNING ASSIGNMENTS/MICRO PROJECT/ACTIVITIES

Assignment:

Sr. No.	Practical/Assignment/Tutorial Title	Relevant COs
1	Weaving a plain weave on a table loom.	CO3
2	Weaving a twill weave on a table loom.	CO3
3	Weaving a sateen weave on a table loom.	CO3
4	Weaving of a honeycomb weave on a frame.	CO3
5	Weaving of a Brighton honeycomb weave on a frame.	CO3
6	Weaving of a huckaback weave on a frame.	CO3
7	Weaving of any color and weave effect on a frame.	CO3

All the assignments carry equal marks. Attempt any 1 of the 7 Assignments, given in the list. The assignment carries 14 marks.

Micro project:

Sr. No.	Practical/Assignment/Tutorial Title	Relevant COs
1	Testing of the plain, twill and sateen weaves woven on the loom as an assignment for tear strength and their comparison.	CO6
2	Testing of the plain and toweling weaves for absorbency and their comparison.	CO6

Each Micro Project carries 5.5 marks each including 2.5 marks for timely completion.

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
CO1	3	1	3	2	2	2	2	2	2
CO2	3	3	3	2	1	2	2	2	2
CO3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	2	1	2	2	2	2
CO5	3	3	3	2	1	2	2	2	2
CO6	3	3	3	3	3	3	3	3	3

Legends :- High:03, Medium:02, :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	William Watson	Elementary weaves and Figured fabrics	Woodhead Publishing Limited
2	N. Gokarneshan	Fabric Structure and Design	New Age International Publishers
3	A.T.C Robinson	Woven Cloth Construction	The Textile Institute
4	Jacque Wilson	Handbook of Textile Design	Woodhead Publishing Limited
5	W.S Murphy	Textile Weaving and Design	Abhishek Publications, Chandigarh



IX.LEARNING WEBSITES & PORTALS

Sr.No	Link / Portal	Description
1	https://onlinecourses.swayam2.ac.in/cec23_te01/preview	Online Learning Initiatives by SWAYAM
2	https://www.youtube.com/@aartibaliga6490/playlists	Fabric Structure - Elementary



Curriculum Coordinator



Head of the Department



Dean Diploma

BOS VITI Approval Dt. 01/08/2023



DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE ENGINEERING
PROGRAMME CODE	: DTE
SEMESTER	: FIRST
COURSE TITLE	: CAD/CAM IN TEXTILES
COURSE CODE	: 236TE15

I.TEACHING AND EXAMINATION SCHEME

TEACHING SCHEME					EXAMINATION SCHEME												
C L	T L	L L	Self - lear ning	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	FA-PR (CA)		SA-PR (PR/OR)		SLA		
											Max	Min	Max	Min	Max	Min	
1	-	4	2	3.5	3	-	-	-	-	-	25	10	50@	20	25	10	100

Total IKS Hrs for Sem. : 2 Hrs

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, *# Online Examination, @\$ Internal Online Examination

Course Category: Discipline Specific Course Core (DSC): 3, Discipline Specific Elective (DSE) : 0, Value Education Course (VEC): 1, Internship/Apprentice/Project/Community (INP): 0, Ability Enhancement Course (AEC): 2, Skill Enhancement Course (SEC): 2, Generic Elective (GE): 0

II.RATIONALE

CAD/CAM plays a significant role in the manufacture of Textile designs and prints. Computer aided Designing (CAD) is widely used in the textile industry to create appealing designs in print or woven form. The knowledge of CAD gives the students an edge for securing jobs or even freelancing for the Textile Industry. The knowledge of Computer aided manufacturing is used in woven designs on dobbees and jacquards. The subject of CAD/CAM in Textiles fosters the development of creative thinking, problem-solving abilities and enhances abstract thinking. Students acquire logical reasoning, problem-solving techniques and analytical thinking, which are valuable for lifelong learning and professional growth.

By engaging in the subject of CAD/CAM, students learn to manufacture textile printed fabrics and woven fabric designs using imaginative skills. The students are able to express and communicate the prints and



designs in an effective manner for the production of fabrics on the machines known as looms. The students are equipped with the ability to design prints and woven designs using software, make informed decisions and navigate real-world situations. CAD/CAM provides a foundation for further studies in various other textile subjects and prepares the students to tackle complex challenges. By exploring abstract concepts and logical reasoning, students develop their ability to reason, make connections, and approach problems with clarity and precision.

Furthermore, studying CAD/CAM helps students appreciate the historical and cultural significance of ancient traditional Indian Textiles and its applications, thereby fostering textile learning and a deeper understanding of the world of textiles. By incorporating the topic of computer aided manufacture of woven designs on dobbies and jacquards, students comprehend how to approach textile engineering problems from a mathematical perspective, enabling them to devise efficient and effective solutions and this leads to preparing Textile Diploma graduates, who are well-rounded, adaptable and capable of making significant contributions to the branch-specific problems.

III. COURSE OUTCOMES (COS)

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

- CO1 - Apply the understanding of the color wheel and the different color combinations to draw small motifs.
- CO2 - Use the various tools of a designing software to create simple design patterns.
- CO3 - Use the various techniques to create a design for a dobby/jacquard loom.
- CO4 - Use different youtube videos to gain knowledge about the various designs of India and prepare a powerpoint presentation for effective presentation skills.

IV. COURSE CONTENTS WITH SPECIFICATION TABLE

Unit & Sub-Unit	Topics/Subtopics	Hours	COs
1	Theories of Colour and Textile designs:	6	CO1
1.1	Light and Pigment Theory.		
1.2	Visual effects and modifications of colors.		
1.3	Important definitions like, tone, tint, shade, contrast, harmony etc.		
1.4	Color schemes- Monochromatic, Analogous, Complementary, Split Complementary, Triadic, Square, Rectangle.		
1.5	Surface Pattern repeats- Full drop/block, Half drop, Brick, Diamond, Ogee and Random.		
2	Designing Software:	6	CO2
2.1	Creating a design on the software-Draw or Download image.		
2.2	Editing the design- rotating, tilting, moving, adjusting design and graph size, mirroring, outline correction, filling color and reducing the colors.		



	2.3	Exporting the created design for weave assignment, editing of weaves and using weaves from the library.		
	2.4	Creating the graph, float finding, and viewing simulations after editing the fabric for warp and weft colors, yarn properties, thread density etc.		
3		Creating a design for Dobby/Jacquard weaving:	4	CO3
	3.1	Choosing the size of the woven figure.		
	3.2	Calculations of the design size based on the capacity of the doobby/jacquard.		
	3.3	Card cutting for jacquard.		

V. LIST OF PRACTICALS/ASSIGNMENTS/TUTORIALS

Sr. No.	Practical/Assignment/Tutorial Title	No. of Hours	Relevant COs
1	Draw the color wheel.	2	CO1
2	Draw motifs using complementary colors- use water colors.	2	CO1
3	Draw motifs using complementary colors- use water colors.	2	CO1
4	Draw motifs using complementary colors- use water colors.	2	CO1
5	Draw small motifs using watercolors and acrylic paints and permanent marker pens.	2	CO1
6	Practice creating a design on the software and using the editing tools- rotating tilting and moving.	2	CO2
7	Practice further editing of the design- adjusting the design and graph size.	2	CO2
8	Practice outline correction, filling colors and reducing the colors in the design.	2	CO2
9	Learn to export the design and practice weave assignments to the design.	2	CO2
10	Practice editing of weaves and using weaves from the library.	2	CO4
11	Learn creating a graph and practice float finding	2	CO2
12	Learn to generate a simulation of the fabric and edit the yarn properties like, color, density etc.	2	CO2
13	Choosing the correct design for doobby/jacquard based on the capacity and calculations.	2	CO3
14	Creating the design for doobby/jacquard.	2	CO3
15	Learn card cutting for jacquard.	2	CO3

Note :

Note: 1. 15 tutorials are based on CO1, CO2 and CO3. CO4 is covered through self learning assignments. 2. Tutorials shall be engaged in the batch size of 20 to 30 students. 3. Each Tutorial shall carry 1.5 marks each including half mark for timely completion of each tutorial. The remaining 2.5 marks are reserved for the complete and timely final submission at the end of the term.



VI. SUGGESTED SELF LEARNING ASSIGNMENTS/MICRO PROJECT/ACTIVITIES

Assignment:

Self Learning Assignment Outcome (SLAO)	Sr.No	Assignment	Relevant COs
SLAO 1.1 Self study the traditional Indian designs.	1	Pick any traditional Indian design and study it in detail to make a power point presentation on the chosen art.	CO4

The assignment carries 25 marks.

VII. ASSESSMENTS METHODOLOGIES /TOOLS

Formative Assessment (Assessment of Learning)

- Laboratory performance
- Assignment
- Self-learning
- Seminar/Presentation

Summative Assessment (Assessment of Learning)

- @ In the practical exam the student shall appear for a practical and/or viva voce based on the tutorials.

VIII. 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	3	1	2	1	3	1	3	2	2
CO2	3	1	3	2	3	2	3	2	2
CO3	3	3	3	3	3	2	3	2	2
CO4	3	2	3	2	3	2	3	2	2

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.



IX.SUGGESTED LEARNING MATERIALS TEXTBOOKS/REFERENCE BOOKS/WEBSITES

Sr.No	Author	Title	Publisher
1	William Watson	Elementary weaves and Figured fabrics	Woodhead Publishing Limited
2	N Gokarneshan	Fabric Structure and Design	New Age International Publishers

X. LEARNING WEBSITES & PORTALS

Sr.No	Link / Portal	Description
1	Youtube channel- Art Thrill Studio	Online Learning- IKS
2	Youtube channel- Maremi Simple Craft and similar channels	Online Learning - painting


Curriculum Coordinator


Head of the Department


Dean Diploma

BOS VJI Approval Dt. 01/08/2023



DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE ENGINEERING
PROGRAMME CODE	: DTE
SEMESTER	: FIRST
COURSE TITLE	: ENGINEERIN GRAPHICS
COURSE CODE	: 236ME16

TEACHING AND EXAMINATION SCHEME

TEACHING SCHEME					EXAMINATION SCHEME															
C	L	T	L	L	Sel f- lea rni ng	C	R	PAP ER HRS	FA- TH (MS T)	SA-TH (ESE)		TOTAL		Based on LL & TL Practical				Based on Self- learning		TOT AL MAR KS
										Ma x	Mi n	Ma x	Mi n	FA-PR (CA)		SA-PR (PR/OR)		SLA		
														Ma x	Mi n	Ma x	Mi n	Ma x	Mi n	
1	0	4	-	25	-	-	-	-	-	-	-	-	50	20	50@	20	-	-	100	

Total IKS Hrs for Sem: 2 Hrs

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, *# Online Examination, @\$ Internal Online Examination

Course Category: Discipline Specific Course Core (DSC): 3, 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

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.



3. To imagine internal details of solid objects from given views and use of drawing conventions.

COURSE OUTCOMES (COs)

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

- 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 CONTENTS WITH SPECIFICATION TABLE

SECTION - I							
Unit & Sub-Unit	Topics/Subtopics	Hours	Marks	COs	R Level	U Level	A Level
1	Drawing Instruments & their uses		-	CO1			
1.1	Letters & Numbers (Single stroke Vertical)	1			50 %	50 %	-
1.2	Convention of Lines & it's applications	1			50 %	50 %	-
2	Orthographic Projections		15	CO1			
2.1	Planes of Projections – HP, VP & PP Orthographic Projections of Points.	1			50 %	50 %	-
2.2	Orthographic Projections of simple machine parts.	2			-	50 %	50 %
3	Pictorial Views-		10	CO2			
3.1	Isometric Projections and Isometric Views. (No problems with slots on inclined surfaces)	3			-	50 %	50 %
SECTION - II							
Unit & Sub-Unit	Topics/Subtopics	Hours	Marks	COs	R Level	U Level	A Level
4	Sectional Orthographic Projections	6	25	CO3			
4.1	Sectional Orthographic Projections of simple machine parts.(Full Section in one view)				-	50 %	50 %



5		Computer aided Drafting	2		CO4			
	5.1	Demonstration & practice of drafting software to the students.				-	50 %	50 %

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

LIST OF PRACTICALS/ASSIGNMENTS/TUTORIALS

Sr. No.	Practical/Assignment/Tutorial Title	No. of Hours	Relevant COs
1	One sheet on Letters, Numbers, & Convention of Lines & it's applications.	3	CO1
2	Four sheets on Orthographic Projections.	12	CO1
3	Four sheets on Sectional Orthographic Projections.	12	CO3
4	Four sheets on Isometric Projections.	9	CO2

ASSESSMENTS METHODOLOGIES /TOOLS:

SUGGESTED SELF LEARNING ASSIGNMENTS / MICRO PROJECT / ACTIVITIES

1. Activities to help students to practice Engineering Graphics problems on Orthographic Projections for getting minimum visualization practice required.
2. Find applications in engineering where one or more above practices are useful.

ASSESSMENTS METHODOLOGIES /TOOLS

Formative assessment (Assessment for Learning)

1. Continuous Assessment of Engineering Graphics drawn on continuous basis.

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	2	-	-	2	-	-	-	2	-



CO2	1	-	-	2	-	-	-	2	-
CO3	2	-	-	2	-	-	-	2	-
CO4	3	-	-	3	2	-	2	-	2

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.

SUGGESTED LEARNING MATERIALS TEXTBOOKS/REFERENCE BOOKS/WEBSITES

Sr. No	Author	Title	Publisher
1	N D Bhatt	Engineering Drawing	Charotar Publishers, 49 th Edition 2010
2	S T Ghan, M V Rawalani	Engineering Graphics & Engineering Drawing	Nirali Publications-seventh Edition - 2009
3	D.A.Jolhe	Engineering Drawing	TATA McGraw Hill- 2008
4	K.R.Mohan	Engineering Graphics	Dhanpatrai publishing co.-1 st edition- 2009


Curriculum Coordinator


Head of the Department


Dean Diploma

BOS VJTI Approval dated 1/8/2023



IPLOMA PROGRAMME	: DIPLOMA IN TEXTILE ENGINEERING
PROGRAMME CODE	: DTE
SEMESTER	: FIRST
COURSE TITLE	: YOGA AND STRESS MANAGEMENT
COURSE CODE	: 236TE17

I. TEACHING AND EXAMINATION SCHEME

TEACHING SCHEME					EXAMINATION SCHEME															
C	L	T	L	L	Sel f- lea rni ng	C	R	PAP ER HRS	FA- TH (MS T)	SA-TH (ESE)		TOTAL		Based on LL & TL Practical				Based on Self- learning		TOT AL MAR KS
										Ma x	Mi n	Ma x	Mi n	FA-PR (CA)		SA-PR (PR/OR)		SLA		
														Ma x	Mi n	Ma x	Mi n	Ma x	Mi n	
-	-	-	1	1	1	-	-	-	-	-	-	-	-	25	10	-	-	25	10	50

Total IKS Hrs for Semester: 1 Hrs

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, *# Online Examination, @\$ Internal Online Examination

Course Category: Discipline Specific Course Core (DSC): 3, Discipline Specific Elective (DSE): 0, Value Education Course (VEC): 1, Internship/Apprentice/Project/Community (INP): 0, Ability Enhancement Course (AEC): 2, Skill Enhancement Course (SEC): 2, Generic Elective (GE): 0

II. RATIONALE:

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. The age of a polytechnic student is appropriate to get introduced to yoga practice as this will help



them in studies as well as his professional life. Moreover, Yoga inculcates discipline in all walks of the life of students. Pranayama practice regulates breathing practices of the student to improve stamina, resilience. Meditation and Stress Management empowers a student to focus and keep calm to get peace of mind. The World Health Organization (WHO) has also emphasized the role of yoga and meditation as stress prevention measures. National Education Policy -2020 highlights the importance of yoga and stress management amongst students of all ages. Therefore, 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.

III. INDUSTRY / EMPLOYER EXPECTED OUTCOME

Practice basic Yoga and Pranayama in daily life and enjoy a stress free life to contribute to the healthy growth of the industry and peaceful coexistence in the society.

IV. COURSE OUTCOMES (COs)

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

- 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 a healthy diet and hygienic practices for maintaining good health

V. LIST OF PRACTICALS/ASSIGNMENTS/TUTORIALS

Sr. No.	Practical/Assignment/Tutorial Title	No. of Hours	Relevant COs
1	Introduction:- Presentations on Introduction to Yoga and its History. Perform warming up exercises to prepare the body from head to toe for Yoga.	2	CO1
2	Perform all the postures of Surya Namaskar one by one in a very slow pace, after warming up.	2	CO1
3	Perform multiple Surya Namaskar (Starting with three and gradually increasing it to twelve) in one go.	2	CO1
4	Perform Sarvangasana, Halasana, Kandharasana (setubandhasana)	2	CO1
5	Perform Bhujangasana, Naukasana, Mandukasana.	2	CO1
6	Perform Paschimottanasana, Baddhakonasana, Bharadwajasana.	2	CO1
7	Perform Virabhadrasana, Vrikshasana, Trikonasana. Follow up	2	CO1
8	Perform Bhastrika, Anulom Vilom Pranayam Kriya Lab	2	CO2
9	Practice Kapalhati Pranayam Kriya	2	CO2



10	Practice Bhramari Pranayam.	2	CO2
11	Perform sitting in Dhyana Mudra and meditating. Start with five minutes and slowly increase to higher durations. (Trainer will explain the benefits of Meditation before practice)	2	CO2
<p>Note :</p> <ol style="list-style-type: none"> 1. Start and end of each session can be with appropriate Yoga prayers and chanting of Omkar. 2. Trainers can add similar asanas in practical sessions. 3. Students are to be instructed to practice the experiment performed at least twice a week as part of self learning practices. 4. Live demonstration by the trainer needs to be carried out during practical hours. Yogic Videos can be used as well. 			

VI. ASSESSMENTS METHODOLOGIES /TOOLS

Formative assessment (Assessment for Learning)

- Tutorials
- Self-learning
- Term Work
- Seminar/Presentation

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	-	-	-	-	3	-	-	-	-
CO2	-	-	-	-	3	-	-	-	-
CO3	-	-	-	-	3	-	-	-	-



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	Swami Vivekananda	Patanjali's Yoga Sutras	Fingerprint Publishing (2023) Prakash Books India Pvt Ltd, New Delhi ISBN- 13:978- 9354407017
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) ISBN-13978-1739737009
3	Swami Saradananda	Mudras for Modern Living: 49 inspiring cards to boost your health, enhance your yoga.	Watkins Publishing (2019) ISBN-13:978-1786782786
4	Martha Davis, Elizabeth Robbins, Matthew McKay, Eshelman MSW	The Relaxation and Stress Reduction Workbook	A New Harbinger Self-Help Workbook (2019)
5	Ann Swanson	Science of Yoga: Understand the Anatomy and Physiology to Perfect Your Practice	ISBN-13: 978-1465479358

IX. LEARNING WEBSITES & PORTALS

Sr. No	Link / Portal	Description
1	https://onlinecourses.swyam2.ac.in/aic19_ed28/preview - introduction to Yoga and Applications of Yog	Yoga and Applications of Yoga
2	https://onlinecourses.swyam2.ac.in/aic23_ge09/preview	Yoga for Creativity
3	https://onlinecourses.swyam2.ac.in/aic23_ge05/preview	Yoga for concentration
4	https://onlinecourses.swyam2.ac.in/aic23_ge06/preview	Yoga for memory development



5	https://onlinecourses.nptel.ac.in/noc21_hs29/preview	Psychology of Stress, Health and Well-being
6	https://onlinecourses.swayam2.ac.in/nce19_sc04/preview	Food Nutrition for Healthy Living - Course – Swayam
7	https://www.classcentral.com/course/swayam-fitness-management-	Fitness Management from Swayam


Curriculum Coordinator


Head of the Department


Dean Diploma

BOS VJTI Approval Dt. 01/08/2023

