



## 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](http://www.vjti.ac.in)

**Program: Diploma in Textile Manufacture (DTM)**

**Semester: I**

**Implemented from: 2017**

COURSE CODE	COURSE	GR	TEACHING SCHEME (HRS/WK)				EXAMINATION SCHEME													
			L	T	P	CR	PAPER HRS	TH		IST	TOTAL		PR		OR		TW		TOTAL MARKS	
								Max	Min		Max	Min	Max	Min	Max	Min				
176MA11	Mathematics- I	B	3	2	-	5	3	80	32	20	100	40	-	-	-	-	25	10	125	
176CH12	Chemistry	B	4	-	2	6	3	80	32	20	100	40	50	20	-	-	25	10	175	
176HM13X	Communication Skills-I	M	3	2	-	5	3	80	32	20	100	40	-	-	-	-	25	10	125	
176CE14	Environmental Studies	A	1	1	0	2	-	-	-	-	-	-	-	-	-	-	25	10	125	
176TM15	Introduction to Textiles	C	3	-	3	6	3	80	32	20	100	40	-	-	-	-	25	10	25	
176ME16	Basic Workshop practice	A	1	-	3	4	-	-	-	-	-	-	-	-	-	-	50	20	125	
176ME17	Engineering Graphics-I	A	2	-	3	5	-	-	-	-	-	-	-	-	-	-	50	20	50	
<b>TOTAL</b>			<b>17</b>	<b>5</b>	<b>11</b>	<b>33</b>	<b>-</b>	<b>320</b>	<b>-</b>	<b>80</b>	<b>400</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>225</b>	<b>-</b>	<b>675</b>	

Abbreviations: B – Basic; C – Core; A – Applied; M – Management; L – Theory Lecture; T – Tutorial; P – Practical; TH – Theory Paper; MST – Mid-Semester Tests; PR – Practical Exam; OR – Oral Exam; TW- Term Work.

Student Contact Hours per week (Formal Teaching): 33 Hours

Theory, Practical and Tutorial periods are of 60 minutes duration

Total Marks 675

  
Curriculum Coordinator

  
Head  
Diploma in Textile Manufacture

  
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DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE MANUFACTURE
PROGRAMME CODE	: DTM
SEMESTER	: FIRST
COURSE TITLE	: MATHEMATICS – I
COURSE CODE	: 176MA11

**TEACHING AND EXAMINATION SCHEME:**

TEACHING SCHEME					EXAMINATION SCHEME											
L	T	P	CR	PAPER HRS	TH		IST	TOTAL		PR		OR		TW		TOTAL MARKS
					Max	Min		Max	Min	Max	Min	Max	Min			
3	2	-	5	3	80	32	20	100	40	-	-	-	-	25	10	125

**Course Objectives:**

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:**

Student should be able to

CO1	Apply properties of determinants to solve simultaneous linear equations.
CO2	Use binomial theorem for expansion and find equation of straight line, under given conditions.
CO3	Define function and find limit of function.
CO4	Apply basic concepts in trigonometry to solve problems.

**Course Content:**

SECTION-I								
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level	
1	Determinants	6	12	1	40%	40%	20%	
	1.1	Determinant of order three. Cramer's rule.						
	1.2	Properties of determinants.						
2	Binomial Theorem	8	8	2	40%	40%	20%	
	2.1	Concepts of Permutations and Combinations and problems based on ${}^n P_r$ , ${}^n C_r$						

*D. P. Kulkarni*

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	2.2	Binomial Theorem with positive integral index, general term.						
3		Straight line	5	12	2	40%	40%	20%
	3.1	Equations of straight lines in different forms.						
	3.2	Angle between two straight lines, conditions for two parallel and perpendicular straight lines.						
4		Function	5	8	3	40%	40%	20%
	4.1	Definition of function.						
	4.2	Types of Functions, composite function.						
		Simple problems based on function						
<b>SECTION-II</b>								
	<b>Unit &amp; Sub-Unit</b>	<b>Topics/Sub-topics</b>						
5		Trigonometry	16	28	4	40%	40%	20%
	5.1	Circular measure of an angle, Conversion from degrees to radians and radians to degrees.						
	5.2	Trigonometric ratios of angle in 4 quadrants.						
	5.3	Compound angle formulae.						
	5.4	Allied angle formulae.						
	5.5	Product formulae, Sum or difference formulae.						
	5.6	Multiple, submultiples angle formulae.						
	5.7	Inverse trigonometric functions.						
6		Limit	8	12	3	40%	40%	20%
	6.1	Concept of limit of a function. Theorems on limits (Without proof)						
	6.2	Limits of algebraic, trigonometric functions.						
	6.3	Standard limits						

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



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

Sr. No.	Unit	Practical/Assignment	Approx. Hours	CO
1	1	Determinants	2	
2	5	Circular measure of an angle, Trigonometric ratios	2	
3	5	Compound angle formulae, Allied angle formulae	2	
4	5	Product formulae, Sum or difference formulae.	2	
5	5	Multiple, submultiples angle formulae Inverse trigonometric functions	2	
6	2	Binomial Theorem	2	
7	4	Function	2	
8	3	Straight line	2	
9	6	Limits of algebraic, functions	2	
10	6	Limits of trigonometric functions	2	

**Reference books and Websites:**

Sr. No.	Author	Title	Publisher and Edition
1	S. P. Deshpande	Mathematics for Polytechnic	Pune Vidyarthi Griha Prakashan.
2	H.K.Dass	Advanced Engineering Mathematics	S.Chand & Company Ltd. Delhi
3	Dr.B.S.Grewal	Higher Engineering Mathematics	Khanna Publishers Delhi

  
Curriculum Coordinator

  
Head  
Diploma in \_\_\_\_\_

  
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DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE MANUFACTURING
PROGRAMME CODE	: DTM
SEMESTER	: FIRST
COURSE TITLE	: CHEMISTRY
COURSE CODE	: 176CH12

### TEACHING AND EXAMINATION SCHEME:

TEACHING SCHEME				EXAMINATION SCHEME												
L	T	P	CR	PAPER HRS	TH		IST	TOTAL		PR		OR		TW		TOTAL MARKS
					Max	Min		Max	Min	Max	Min	Max	Min			
4	0	2	6	3	80	32	20	100	40	50*	20	-	-	25 @	10	175

### Course Objectives:

- 1 To understand mole concept and volumetric analysis.
2. To describe the mechanism of redox reactions.
3. Implementing the knowledge for the utilization of water resources in engineering & trouble shooting of the problems while using unsuitable water.
4. To identify the properties of organic compounds related to engineering applications.

### Course Outcomes:

Student should be able to

CO1	Use the basic principles of chemistry to predict the electronic configuration, chemical reactions and describe the chemical bonding in molecules.
CO2	Define and explain various concepts of acids and bases, define pH and correlate it with the nature of aqueous solutions- neutral, acidic or basic. Understand & calculate solubility product.
CO3	Solve the quantitative problems involving moles and concentrations of solution.
CO4	Describe the hardness & method for removing from water.
CO5	Select appropriate materials used in lubrication.
CO6	Apply knowledge to enhance operative life span of engineering material & structure by various corrosion protective methods.
CO7	Compare properties of organic compounds and inorganic compounds. Use the polymeric materials in engineering applications.
CO8	Understand the properties, Select and Use the polymeric materials in engineering applications.
CO9	Perform laboratory experiment demonstrating safe and proper use of standard chemistry glass ware and equipments

CO10	Record and interpret the data obtained from experimentation
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**Course Content:**

SECTION-I								
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level	
1	<b>Atomic Structure and Chemical Bonding</b>	8	12	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	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>Acid, Base &amp; Salt</b>	8	10	2	40%	40%	20%	
2.1	Definitions & theories of acids & bases: Classical theory, Arrhenius theory, Lowry-Bronsted theory, Lewis theory,							
2.2	pH, pOH, pH scale, Numericals, Basicity of an acid and acidity of a base, Numericals of Equivalent weight of acids, bases, Definition of salts & types of salts: Normal, Acidic, Basic, Mixed, Double salts, complex salts							
3	<b>Solution</b>	6	12	3	40%	40%	20%	
3.1	Solution, Concentrations of solution: Grams per litre, Percentage by weight or volume, Normality, Molarity, Molality, Numericals,							
3.2	Volumetric analysis, Titrations, Acid base titration, Acidimetry, Alkalimetry, Redox titration, Iodometric							

Sem II, DCE, VJTI  
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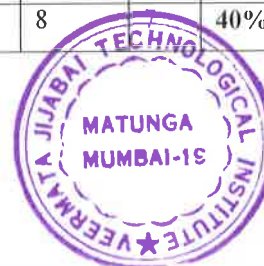
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		titrations, Complexometric titration, Precipitation titration, Numericals						
<b>4</b>		<b>Water</b>	10	12	4	40%	40%	20%
	<b>4.1</b>	Introduction, Hard and soft water, hardness, types of hardness, its expression as calcium carbonate hardness, its units and its determination (EDTA method only).						
	<b>4.2</b>	Disadvantage of use of hard water, Water softening External processes – Lime – Soda process, Zeolite Permutit method and Ion exchange method and comparison of methods,						
	<b>4.3</b>	boiler problems-scale, sludge, caustic embitterment and corrosion, priming and foaming their causes and prevention, internal treatments, Numerical problems on hardness by EDTA method.						
<b>SECTION-II</b>								
<b>Unit &amp; Sub-Unit</b>	<b>Topics/Sub-topics</b>							
<b>5</b>		<b>Lubricant</b>	06	08	5	40%	40%	20%
	<b>5.1</b>	Lubricant, Lubrication, Function of lubricant, Mechanisms of lubrication, Types of lubricants: solid, semi solid and liquid lubricants,						
	<b>5.2</b>	Ideal lubricant and properties: Viscosity, Viscosity index, fire point, flash point, pour point, cloud point, Saponification value, Acid value.						
<b>6</b>		<b>Corrosion</b>	10	10	6	40%	40%	20%
	<b>6.1</b>	Introduction, Types of corrosion (dry and wet corrosion), types and mechanism of Atmospheric corrosion, oxide films, factors affecting the corrosion,						
	<b>6.2</b>	electrochemical corrosion, mechanism of factors electrochemical corrosion, types of electrochemical corrosion: galvanic corrosion and concentration cell corrosion,						
	<b>6.3</b>	protective measures against corrosion: coatings (galvanic and zinc, organic coating agents, Electroplating, metal cladding,).						
<b>7</b>		<b>Organic Chemistry</b>	8	8		40%	40%	20%

*Dr. P. K. Kulkarni*  
Sem II, DCE, VJTI

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7.1	Introduction: Types of chemistry, Catenation property of Carbon element, Organic compounds, its properties and applications, Classification: by structure and functional group,							
7.2	Homologous series, Alkanes, alkenes and alkyenes: Definition, General formula, Names and structure of first five members, Isomerism, Properties and Uses.							
8	<b>Polymers</b>	8	8	8	40%	40%	20%	
8.1	Polymer, Monomer, classification of polymers, Polymerisation, Addition and condensation polymerisation							
8.2	Plastics: definition, types: thermosetting & thermo softening plastics, compounding of plastics, properties and applications of plastics,							
8.3	Rubber, structure of rubber, Natural rubber: preparation & properties, Vulcanization of rubber, properties of vulcanized rubber, synthetic rubber & its comparison with natural rubber. Properties and applications of rubbers							
<b>Legends:</b> 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.*

*D.P. Kulkarni,*

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

Sr. No.	Practical/Assignment	Approx. Hours	CO
1	To study the use of indicators, for identification of acid, base and neutral solutions from the given set of solutions.	2	9, 10
2	To standardize HCl solution using N/10 Na <sub>2</sub> CO <sub>3</sub> .	2	9, 10
3	To standardize KMnO <sub>4</sub> solution using N/10 C <sub>2</sub> H <sub>2</sub> O <sub>4</sub> solution.	2	9, 10
4	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	9, 10
5	To standardize EDTA solution using N/10 ZnSO <sub>4</sub> solution.	2	9, 10
6	To standardize AgNO <sub>3</sub> solution using NaCl solution.	2	9, 10
7	To determine strength of the mixture of H <sub>2</sub> SO <sub>4</sub> + C <sub>2</sub> H <sub>2</sub> O <sub>4</sub> using NaOH and KMnO <sub>4</sub> solution.	2	9, 10
8	To estimate amount of Iron in plain carbon steel	2	9, 10
9	To estimate amount of copper in brass	2	9, 10
10	To estimate amount of Zinc in brass	2	9, 10

\* Minimum 8 and maximum 12 practicals/experiment sessions to be included in a course in a term

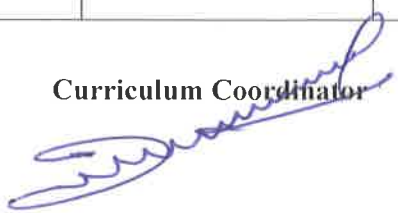
**Text Books:**

Sr. No.	Title	Publisher and Edition
1	XI <sup>th</sup> standard Chemistry book	HSC Board, M.S. / NCERT
2	XII <sup>th</sup> standard Chemistry book	HSC Board, M.S. / NCERT

**Reference books and Websites:**

Sr. No.	Author	Title	Publisher and Edition
1	Jain & Jain	Engineering Chemistry	Dhanpat Rai & Co. (Pvt.) Delhi – 110006 Ltd Edition: Fifteenth (2008)
2	Shashi Chawla	A Text Book of Engineering Chemistry	Educational & Technical Publishers Dhanpat Rai & Co. (Pvt.) Ltd, Edition: Third (2005)
3	S. S. Dara & S. S. Umare	A Text Book of Engineering Chemistry	S. Chand & Company Ltd. Ran nagar, New Delhi – 110 055 Edition: Twelfth (2010)

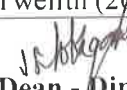
Curriculum Coordinator



Sem II, DCE, VJTI

 Head  
 Diploma in ~~Technical~~  
 Chemistry

Dean - Diploma






DIPLOMA PROGRAMME	: DIPLOMA (All branches )
PROGRAMME CODE	DTM
SEMESTER	: FIRST
COURSE TITLE	: COMMUNICATION SKILLS I
COURSE CODE	: 176HM13x

**TEACHING AND EXAMINATION SCHEME:**

TEACHING SCHEME				EXAMINATION SCHEME												
L	T	P	CR	PAPER HRS	TH		IST	TOTAL		PR		OR		TW		TOTAL MARKS
					Max	Min		Max	Min	Max	Min	Max	Min			
3	2	0		3	80	32	20	100	40	-	-	-	-	25	10	125

**Course Objectives:** Cultivating writing 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 .

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

**Course Outcomes:**

Student should be able to

CO1	To acquire the ability to formulate grammatically correct sentences
CO2	To improve power of expression in written communication
CO3	To develop coherence in thinking, comprehending and expressing one's ideas in one's own language

Dr. D.P. Kulkarni,  
 Course Coordinator



**Course Content**

SECTION-I							
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level
I	1	14	22	CO 3	30%	50%	20%
	A)Modern Trailblazers- textbook 1 B) Delights in prose- textbook 2  a) Five to six chapters from the prescribed textbooks b) Power point presentation based on texts as well as drawing parallels from industry c) Inviting speakers from the industry to deliver lectures connected with the topics in the text.						
	2	3	3	CO 2	20%	20%	60%
	Word formation from the text. a) Use of technical vocabulary b) correct spellings c) synonyms d) powerful expression						
3 A	Short composition a) Paragraph writing - Coherence - Correct grammar - good vocabulary - proper structure b) Description of an object or a product or a situation. -use of technical words - development of ideas	5	8	CO 3	20%	20%	60%
3 B	Comprehension passages a) Summarization of passages in one's own words.(Newspaper articles, general articles etc )	4	7	CO 3	30%	50%	20%



		b) <b>Identifying the theme</b> of the passage precisely and enumerating the sub points						
<b>SECTION-II</b>								
<b>Unit &amp; Sub-Unit</b>		<b>Topics/Sub-topics</b>						
II	1	<b>Vocabulary Building</b> a) Synonyms b) Antonyms c) Homophones d) One word substitutes e) Homonyms	5	10	CO 2	20%	40%	40%
	2	<b>A) Application of grammar</b> a) Correction of common errors in English b) Sentence structure <b>B) short official letters</b> a) leave applications b) seeking permission from authority c) grievance letter (campus situations )	4  6	15	CO 1	30%	50%	20%
	3	<b>Use of refined language</b> a) Idioms b) Proverbs c) Phrases	7	15	CO 2	40%	40%	20%
	TOTAL		48	80				
<p><b>Legends:</b> R- Remember, U – Understand, A – Apply and above levels (Blooms’s Revised Taxonomy).</p>								

*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 Assignments/Tutorials:**

Sr. No.	Practical/Assignment	Approx. Hours	CO
1.	Synonyms	2	CO 2
2.	Antonyms	2	CO 2
3.	Homophones	2	CO2
4.	Homonyms		CO 2

Sem I, VJTI  





5.	One word substitute	2	CO 2
6	Phrases	2	CO2
7	Idioms	2	CO 2
8	Proverbs	2	
9	Sentence structure	2	CO 1
10.	Correction of Errors	2	CO 1
11	Comprehension a) Summarizing PPT Presentation b) Recapping the speech delivered	4	CO 3
12	Composition writing a) short letters	4	CO 3

### Text Books:

Sr. No.	Author	Title	Publisher and Edition
1	Board of Editors – Chief Editor-Ajay R. Tengse	Delights in Prose	Orient Black Swan, First edition, 2014
2	Akshay V. Dhote Hitendra V. Dhote	Modern Trailblazers	Orient Black Swan, First edition, 2013

### Reference books and Websites:

Sr. No.	Author	Title	Publisher and Edition
1	Oxford	Dictionary	Oxford University
2	Sanghita sen Alankrita Mahendra Priyadarshi Patnaik	Communication Language and Skills	Cambridge university Press, First published, 2015
3	B.V Pathak	English semester 1	Nirali Prakashan, Fourth Edition, 2007
4	Green David	Contemporary English Grammar, structure and composition	Macmillan, India, First

			edition, 2000
5	Raymond Murphy	Essential English Grammar	Cambridge university Press, third Edition, 2011

**Curriculum Coordinators**

1. Vandana Mishra
2. Tanvi Joshi

**Head**  
(R.Thomas)  
H&M Dept

**Dean - Diploma**

*S. S. S. S.*  
A. B. A. P. K. K. K. K. K.  
Curriculum  
Coordinator.

*R. Thomas*  
H. O. D.  
Textile. Mty. Dept.

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DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE MANUFACTURES
PROGRAMME CODE	: DTM
SEMESTER	: FIRST
COURSE TITLE	: INTRODUCTION TO TEXTILES
COURSE CODE	: 176TM15

**TEACHING AND EXAMINATION SCHEME:**

TEACHING SCHEME				EXAMINATION SCHEME												
L	T	P	CR	PAPER HRS	TH		IST	TOTAL		PR		OR		TW		TOTAL MARKS
					Max	Min		Max	Min	Max	Min	Max	Min			
3	0	3	3	3	80	32	20	100	40					25	10	125

**Course Objectives:**

Students must be able to,

1. Identify the natural fibres.
2. Classify the various naturally available textile fibres and know the units of measuring their Properties
3. Know the various types of yarns.
4. Learn the spinning, weaving and processing flowcharts
5. Know the various types of drives and calculate speeds.

**Course Outcomes:**

Student should be able to

CO1	Acquire basic knowledge about the textile industry and classification of fibres and yarns
CO2	Understand the physical properties and characteristics of different types of fibres
CO3	Understand the properties of different manmade fibres and their comparison with natural fibres
CO4	Study the basic of spinning process
CO5	Study the basic of weaving process
CO6	Solve the problem related to different types of drives
CO7	Plan and perform experiment on spinning machines
CO8	To apply engineering knowledge for calculating speeds of various parts of machines

*Dr. D. P. Kulkarni*

*(Signature)*





**Course Content:**

SECTION-I							
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level
1	<b>Overview of the Textile Industry, raw material and their classifications based on origin</b>	8	14				
1.1	Textile industry, history, growth, scope, potential and recent trends. Fibres used in textile industry			CO1	40%	60%	
1.2	Classification of fibres – Natural, Regenerated and synthetic fibres. Definition of terms like – Fibre, Staple fibre, Filament, Monofilament and Multifilament			CO1	40%	60%	
2	<b>Introduction to natural fibres and their characteristics</b>	8	14				
2.1	Basic fibre properties like fineness, length, strength, elongation, moisture regain, stiffness and fibre contamination. The essential and the desirable properties of fibre. Units used for above measurement.			CO2	40%	40%	20%
2.2	Cotton, wool, silk and jute as raw materials, their growth and characteristics like cross sectional shape and surface characteristics and their effects on the properties of fibre			CO2	40%	40%	20%
3	<b>Polymer and the important fibre properties</b>	8	12				
3.1	Definitions of Monomer and Polymer. Thermoplastic and Non thermoplastic polymers, Degree of polymerization, molecular weight, crystallinity, fibre orientation and their effects on fibre properties.			CO3	40%	60%	
3.2	Properties of fibres like Cotton, Wool, Silk, Jute, Viscose Rayon, Polyester, Polyolefins and Polyamides. Comparison of the values of important fibre properties.			CO3	40%	60%	
SECTION-II							
Unit & Sub-Unit	Topics/Sub-topics						
4	<b>Introduction to spinning</b>	8	14				
4.1	Definition of Yarn, spun yarn, filament yarn, plies of yarn. Cotton Spun yarn. Spinning – flow char and object of each process.			CO4	40%	60%	
4.2	Basic introduction to the various type of yarn of yarns like ring spun, open end, fancy, textured and blended yarns.			CO4	40%	60%	



5		<b>Introduction to weaving and fabric processing</b>	8	14				
5.1		Definitions-, classification of fabrics. Fabric, warp and weft, selvedge. Flow chart and object of each process for woven fabric production. Types of knitted and non woven fabrics.			CO5	40%	60%	
5.2		General flow chart for processing of grey fabric			CO5	40%	60%	
6		<b>Calculations related to various types of drives</b>	8	12				
6.1		Various types of drives like pulley drive, gear drive, belt drives, cone drums, rack and pinion, worm and worm wheel. Types of cams.			CO5	40%	60%	
6.2		Speed calculations, rpm and surface speeds. Problems based on these calculations.			CO5	20%	20%	60%
		<b>Total</b>	<b>48</b>	<b>80</b>				

**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.*

#### List of Practicals/Assignments/Tutorials:

Sr. No.	Unit	Practical/Assignment	Approx. Hours	CO
1		Observation of the various blowroom machines. Name them and briefly state their objects.	3 hrs	CO7
2		Observation of the sequence of spinning and the drawing of the flowchart.	3 hrs	CO7
3		Speed calculations for the various drives used in the spinning machine.	3 hrs	CO8
4		Demonstration of the working of the loom.	3 hrs	CO7
5		Observation and drawing of the flowchart of weaving	3 hrs	CO7
6		Speed calculation for the various basic drives used in the weaving machines	3 hrs	CO8

\* Minimum 8 and maximum 12 practicals/experiment sessions to be included in a course in a term

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**Text Books:**

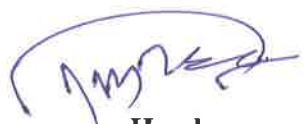
Sr. No.	Author	Title	Publisher and Edition
1	Dr. H.V.S. Murthy	Introduction to textile fibres	Woodhead Publications
2	Dr. M.K. Talukdar, Prof. P.K. Sriramulu and Prof. D.B.Ajgaonkar	Weaving – Machines, Mechanisms, Management	Mahajan Publishers Pvt. Ltd.

**Reference books and Websites:**

Sr. No.	Author	Title	Publisher and Edition
1	Werner Klein	The Technology of Short staple spinning, Vol 1	The Textile Institute, First Edition-1987
2	Coulson	Manual of Cotton spinning, The Characteristics of Raw Cotton, Volume I	The Textile Institute
3	E Lord	Manual of Cotton spinning, The Characteristics of Raw Cotton, Volume II	The Textile Institute



**Curriculum Coordinator**



**Head,  
Diploma in Textile  
Manufacture**



**Dean - Diploma**



DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE MANUFACTURE
PROGRAMME CODE	: DTM
SEMESTER	: FIRST
COURSE TITLE	: ENVIRONMENTAL STUDIES
COURSE CODE	: 176CE14

**TEACHING AND EXAMINATION SCHEME:**

TEACHING SCHEME				EXAMINATION SCHEME													
L	T	P	CR	PAPER HRS	TH		IST	TOTAL		PR		OR		TW		TOTAL MARKS	
					Max	Min		Max	Min	Max	Min	Max	Min	Max	Min		
1	1	0	2	-	-	-	-	-	-	-	-	-	-	-	25	10	25

**Course Objectives:** At the end of this course students will be able to

- Know multidisciplinary nature of environmental studies.
- Know various types of environmental pollution, its causes, effects & control measures.
- Know about solid wastes management.
- Know social issues such as human population, human rights & health.

**Course Outcomes:**

Student should be able to

CO1	Define & explain multi-disciplinary nature of Environmental studies & basics of solid waste management
CO2	Explain different types of natural sources and their effects on environment.
CO3	Explain various types of pollutions, its causes , controls etc.
CO4	Define and explain the ethical values for environment.
CO5	Define bio diversity and their conservation for human society.

**Course Content:**

SECTION-I							
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level
1	The Multidisciplinary nature of environmental studies : Definition of Environment, Components and	02		1 & 4	40%	40%	20%

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	types, Need for public awareness, Environmental Ethics. 1.1 Social Issues- Strategies for Sustainable development, urban problems related to energy, water conservation, global environmental changes. 1.2 Human Population- Population growth, environment and human health, value education						
2	Natural Resources : 2.1 Renewable and non renewable resources: 2.2 Natural resources and associated problems 2.2.1 Forest resources: Use and over-exploitation, deforestation, mining, dams and their effects on forests and tribal people. 2.2.2 Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dam's benefits and problems. 2.2.3 Energy Resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, case studies. 2.3 Role of individual in conservation of natural resources. 2.4 Equitable use of resources for sustainable life styles	04		2	30%	30%	40%
<b>SECTION-II</b>							
<b>Unit &amp; Sub-Unit</b>	<b>Topics/Sub-topics</b>						
5	Environmental Pollution : Definition Causes, effects and control measures of:- 5.1 Air pollution 5.2 Water pollution 5.4 Soil pollution 5.5 Marine pollution 5.6 Noise pollution 5.7 Thermal pollution	10		3	30%	30%	40%

	5.8 Nuclear hazards						
<b>Legends:</b> 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.*

#### of Practicals/Assignments/Tutorials:

Sr. No.	Unit	Practical/Assignment	Approx. Hours	CO
	1	Role of Information Technology in Environment and Human health	1	1 & 4
	2.	Various Natural resources and associated problems and Role of individual in conservation of natural resources.	2	2
	3.	Types and characteristics of different types of ecosystems.	2	5
	4.	Definition and types of biodiversity (genetics, species and ecosystem diversity). Conservation measures for Bio diversity in India.	3	5
	6.	Role of an individual in prevention of pollution.	1	1 & 3
	7.	Students (in a group of 7-8 students) shall give seminar on a current topic related to environmental issues.	7	1, 2, 3, 4 & 5

#### Text Books:

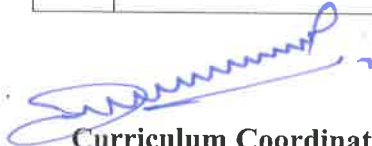
Sr. No.	Author	Title	Publisher and Edition
1.	Anindita Basak	Environmental Studies	Pearson Publication, 1 <sup>st</sup> Edition. 2009.
2.	Dr. J. P. Sharma	Environmental Studies	Laxmi Publications (P) Ltd; 3 <sup>rd</sup> edition , 2009
3.	Erach Bharucha	Textbook of Environmental studies	UGC, 1 <sup>st</sup> Edition, 2011
4.	D D Mishra	Fundamental concepts in Environmental Studies	S Chand & Co Ltd, 1 <sup>st</sup> Revised edition 2009

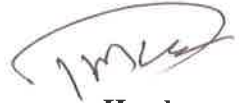
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**Reference books and Websites:**

Sr. No.	Author	Title	Publisher and Edition
1.	Dr. H.S. Bhatia.	Environmental Pollution and Control	Galgotia Publications (p) LTD. 1 <sup>st</sup> edition,1998.
2.	Anubha Kaushik and C.P. Kaushik	Environmental Studies	New Age International (P) Ltd. 1 <sup>st</sup> Edition, 2007.

  
Curriculum Coordinator

  
Head  
Diploma in \_\_\_\_\_

  
Dean - Diploma



**Course Name : Diploma in Textile Manufacturing**  
**Course Code : DTM**  
**Semester : First**  
**Subject Title : Basic Workshop Practice**  
**Subject Code : 176ME16**

**Teaching & Examination Scheme:-**

Teaching Scheme			Paper Hours	Examination Scheme										Total Marks	
L	T	P		Theory		Test	Total		P		O		TW		
				Max	Min		Max	Min	Max	Min	Max	Min	Max		Min
1	-	3	-	-	-	-	-	-	-	-	-	50	20	50	

**Rationale:-**

Textile manufacturing diploma student is expected to know basic workshop practice like Wood working and hot working processes. The students are required to identify, operate and control various machines. The students are required to select and use various tools and equipments related to Wood working and smithy processes.

**Course Objectives:**

1. To lay a strong foundation in study and practice of basic workshop processes which is the backbone in Engineering.
2. To make students well versed to identify, select and use various marking, measuring, holding, striking and cutting tools & equipments.

**Course Outcomes:**

Student should be able to

CO1	Learn types of engineering material and their properties.
CO2	Operate, control different machines and equipments.
CO3	Inspect and produce the job as per specified dimensions.
CO4	Adopt safety practices while working on various machines.

**Course Content:**

Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level
1	<b>ENGINEERING MATERIALS:</b>	2	8	1	2	2	6
	1.1 Introduction.						
	1.2 Different types of ferrous and non-ferrous materials.						

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1.3	Properties of Engineering materials.						
2	<b>CARPENTRY SHOP:</b>	3	8	3	1	1	6
2.1	Introduction.						
2.2	Various types of woods.						
2.3	Different types of tools, machines and accessories.						
3	<b>FITTING SHOP:</b>	3	8	3	2	2	4
3.1	Introduction						
3.2	Various marking, measuring, cutting, holding and striking tools.						
3.3	Different fitting operation like chipping, filing, right angle, marking, drilling, tapping etc.						
3.4	Working Principle of Drilling machine, Tapping dies, its use.						
3.5	Safety precautions and safety equipments.						
4	<b>WELDING SHOP:</b>	3	9	4	1	2	6
4.1	Introduction.						
4.2	Types of welding, ARC welding, Gas welding, Gas Cutting.						
4.3	Welding of dissimilar materials, Selection of welding rod material, Size of welding rod and work piece.						
4.4	Different types of flame.						
4.5	Elementary symbolic representation.						
4.6	Safety precautions in welding, safety equipments and its use in welding processes.						
5	<b>SHEET METAL WORKING</b>	3	9	2	2	2	6
5.1	Introduction.						
5.2	Various types of tools, equipments and accessories						
5.3	Different types of operations in sheet metal shop.						
5.4	Soldering and riveting.						
5.5	Safety precautions.						
6	<b>LATHE:</b>	2	8	4	1	1	5
6.1	Introduction.						
6.2	Various operations performed on Lathe machine.						
6.3	Main parts of Lathe machine.						

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**Legends:** R- Remember, U – Understand, A – Apply

**List of Practicals:**

Sr. No.	Practical	Approx. Hours	CO
1	<b>CARPENTRY SHOP:</b> Demonstration of different wood working tools / machines. Demonstration of different wood working processes, like planing, marking, chiseling, grooving, turning of wood etc. One simple job involving any one joint like mortise and tenon, dovetail, bridle, half lap etc.	12	1
2	<b>FITTING SHOP:</b> Demonstration of different fitting tools and drilling machines and power tools. Demonstration of different operations like chipping, filing, drilling, tapping, cutting etc. One simple fitting job involving practice of chipping, filing, drilling, tapping, cutting etc.	15	2
3	<b>WELDING SHOP:</b> Demonstration of different welding tools / machines. Demonstration of Arc Welding, Gas Welding, Gas Cutting and rebuilding of broken parts with welding. One simple job involving butt and lap joint.	9	2,4
4	<b>SHEET METAL SHOP:</b> Demonstration of different sheet metal tools / machines. Demonstration of different sheet metal operations like sheet cutting, bending, edging, end curling, lancing, soldering and riveting. One simple job involving sheet metal operations and soldering and riveting.	9	3

**Reference books :**

Sr. No.	Author	Title	Publisher and Edition
1	K.C.John	Mechanical Workshop Practice	PHI Learning Pvt Ltd. EEE 2010
2	B.S. Raghuwanshi	Workshop Technology	Dhanpat Rai and sons, New Delhi, 9 <sup>th</sup> Edition, 2002
3	S.K. Hajra Chaudhary	Workshop Technology Vol I & II	Media Promoters and Publisher, New Delhi. 8 <sup>th</sup> edition , 1986.

  
Curriculum Coordinator

  
Head

  
Dean - Diploma



Diploma in \_\_\_\_\_



DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE MANUFACTURING
PROGRAMME CODE	: DTM
SEMESTER	: FIRST
COURSE TITLE	: ENGINEERIN GRAPHICS
COURSE CODE	: 176ME17

**TEACHING AND EXAMINATION SCHEME:**

TEACHING SCHEME				EXAMINATION SCHEME													
L	T	P	CR	PAPER HRS	TH		IST	TOTAL		PR		OR		TW		TOTAL MARKS	
					Max	Min		Max	Min	Max	Min	Max	Min				
2	-	3	5		-	-							-	-	50	20	50

**Course Objectives:**

1. To understand geometry of shapes, drawing conventions, definitions and drawing procedures.
2. 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:**

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>Drawing Instruments &amp; their uses</b>						
	1.1 Letters & Numbers (Single stroke Vertical)	1		1			
	1.2 Convention of Lines & it's applications			1			

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2		<b>Orthographic Projections</b>					
	2.1	Planes of projections – HP, VP & PP Orthographic projections of points.	1		1		
	2.2	Orthographic Projections of simple machine parts.	7	15	1		
3		<b>Pictorial Views-</b>					
	3.1	Isometric Projections and Isometric Views. (No problems with slots on inclined surfaces)	6	10	2		
<b>SECTION - II</b>							
<b>Unit &amp; Sub-Unit</b>	<b>Topics/Sub-topics</b>						
4		<b>Sectional Orthographic Projections</b>					
	4.1	Sectional Orthographic Projections of simple machine parts.(Full Section in one view)	12	25	3		
5		<b>Computer aided Drafting</b>					
	5.1	Demonstration & practice of drafting software to the students.	4		4		
<b>Legends:</b> R- Remember, U – Understand, A – Apply and above levels (Blooms’s Revised Taxanomy).							

*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 Letters, Numbers, & Convention of Lines & it’s applications.		
2	2	Four sheets on Orthographic Projections.		
3	4	Eight sheets on Orthographic Projections.		
4	3	Four sheets on Isometric Projections.		

**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


Sem I, DTM, VJTI  
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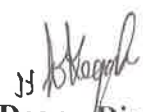


**Reference books and Websites:**

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.-1 <sup>st</sup> edition- 2009

  
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Dr. D.P. Kakad  
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