



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

Program: Diploma in Textile Manufacture (DTM)

Semester: II

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	Max	Min		
176MA21	Mathematics- II	B	3	2	-	5	3	80	32	20	100	40	-	-	-	-	25	10	125	
176PH22	Physics	B	4	-	2	6	3	80	32	20	100	40	50	20	-	-	25	10	175	
176ST23	Engineering Mechanics	A	3	-	2	5	3	80	32	20	100	40	-	-	-	-	25	10	125	
176TM24	Yarn Manufacture I	C	3	-	3	6	3	80	32	20	100	40	-	-	-	-	25	10	125	
176TM25	Fabric Manufacture I	C	3	-	3	6	3	80	32	20	100	40	-	-	-	-	50	20	150	
176HM26	Life Skills	M	-	2	-	2	-	-	-	-	-	40	-	-	-	-	50	20	150	
176TM27	Computer Fundamentals	B	-	-	3	3	-	-	-	-	-	-	-	-	-	50	20	-	50	
TOTAL			16	4	13	33	-	400	-	100	500	-	50	-	50	-	25	10	25	
																	200	-	800	

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 800

* Indicates assessment by External Examiner


Curriculum Coordinator


Head
Diploma in Textile Manufacture


Dean - Diploma



DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE MANUFACTURE
PROGRAMME CODE	: DTM
SEMESTER	: SECOND
COURSE TITLE	: MATHEMATICS - II
COURSE CODE	: 176MA21

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 lay a strong foundation in study of calculus which is the backbone for study in technology..
2. To make students well versed in the prerequisites for further studies in mathematics and technology.
3. To impart knowledge of statistics.

Course Outcomes:

Student should be able to

CO1	Use definition and formulae of derivatives to solve the problems.
CO2	Apply results in integration to solve the problems.
CO3	Use basics of statistics to solve the problems.
CO4	Understand concepts of probability, probability distributions and solve the problems based on them.

Course Content:

SECTION-I							
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level
1	Derivatives	11	18	1	40%	40%	20%
	1.1 Derivatives of standard functions by first principle.						
	1.2 Rules of differentiation.						
	1.3 Derivative of composite function. (chain rule).						
	1.4 Derivative of implicit function.						
	1.5 Logarithmic differentiation						
2	Integration	13	22	2	40%	40%	20%
	2.1 Definition of integration. Integration of standard functions.						
	2.2 Theorems of integration.						

Dr. A.P. Kakode

14/2



2.3	Methods of Integration a) Integration by substitution b) Integration of rational functions. c) Integration by partial fractions. d) Integration by parts.						
2.4	Definition of definite integral with simple problems						
SECTION-II							
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level
3	Statistics	6	12	3	30%	30%	40%
	Mean, Standard Deviation, Variance, Coefficient of Variation .						
4	Probability	18	28	4	30%	30%	40%
4.1	Elementary Probability a) Sample space and events. b) Concept of probability. c) Conditional probability and independence. d) Addition theorem, multiplication theorem.						
4.2	Probability distribution a) Binomial distribution b) Poisson's distribution c) Normal distribution						

List of Practicals/Assignments/Tutorials:

Sr. No.	Unit	Tutorial/Assignment	Approx. Hours	CO
1	1	Derivative	2	1
2	1	Derivative	2	1
3	2	Integration	2	1
4	2	Integration	2	2
5	2	Integration	2	2
6	2	Integration	2	2
7	3	Statistics	2	3
8	4	Probability	2	4
9	4	Probability distribution	2	4

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	Advance Engineering Mathematics	S.Chand & Company Ltd. Delhi

S. P. Deshpande

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3	Dr.B.S.Grewal	Higher Engineering Mathematics	Khanna Publishers Delhi
4	S.P.Gupta and Kapoor	Fundamental of Mathematical Statistics	S.Chand & Company Ltd. Delhi


Curriculum Coordinator


Head
Diploma in _____


Dean Diploma



DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE MANUFACTURES
PROGRAMME CODE	: DTM
SEMESTER	: TWO
COURSE TITLE	: PHYSICS
COURSE CODE	: 176PH22

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		2	6	3	80	32	20	100	40	50	20	-	-	25	10	175

Course Objectives:

- Identify different systems of units and convert units from one system to another
- Estimate and minimize errors.
- Select proper measuring instruments considering least count, range and precision required.
- Select appropriate materials required for specific purpose by studying properties of materials
- To understand the concepts of charge, current, resistance, capacitance, potential and magnetism .
- Identify phenomena of interference and diffraction of light, velocity of sound and resonance.
- Understand gas laws, laws of thermodynamics, transmission of heat and identify good & bad conductors.
- Use properties of X-Rays, photoelectric effect, Lasers, Optical fibers for various engineering applications.
- Identify, analyze, discriminate and interpret logical sequence of field problems with the study of physics. .

Course Outcomes:

D. P. Kulkarni

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Student should be able to

CO1	Understand concept of measurement, units and learn the use of simple measuring instruments and correct errors in them.
CO2	Understand properties of matter like elasticity, viscosity, surface tension and solve simple numericals based on these topics.
CO3	Understand basic concepts of electricity, magnetism and solve problems.
CO4	Understand basic concepts of optics - wave theory, reflection , refraction, total internal reflection, dispersion, interference, diffraction ,and basics of sound- velocity of sound, resonance and solve simple problems based on these topics.
CO5	Understand gas laws, specific heats, expansion, transmission of heat, Coefficient of thermal conductivity and solve problems based on these topics.
CO6	Gain basic knowledge of Modern Physics (X-Rays, Photo-electric effect, Lasers, Optical Fibers.)

Course Content:

SECTION-I								
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level	
1	1. Measurements	07	12	CO1	40%	40%	20%	
	1.1 Units: Concept of unit of a physical quantity, requirements of a standard unit, Various system of units (CGS, MKS, SI, FPS). Conversions, practical units, fundamental and derived physical quantities and their units.							
	1.2 Measuring Instruments: Vernier Callipers, micrometer Screw gauge, thermometer, galvanometer, voltmeter, ammeter with least count and range, errors in them and correction to it.							
2	2. Properties of Matter	10	12	CO2	40%	40%	20%	
	2.1 Elasticity: Deformation, restoring force, stress, strain, Hooke's Law, Moduli of elasticity(Young, Bulk and Rigidity), relation between them,							



		problems, stress-strain diagram for some materials (steel, aluminium, cast iron, concrete), breaking stress, factor of safety.						
	2.2	Viscosity: Newton's law of viscosity, coefficient of viscosity, units, streamline and turbulent flow, critical velocity, Reynold's number, problems, Stoke's law, determination of viscosity, factors affecting viscosity.						
	2.3	Surface Tension: Cohesive and adhesive forces, angle of contact, surface tension, capillary action, problems, factors affecting surface tension						
3	3	Electricity and magnetism	15	16	CO3	40%	40%	20%
	3.1	Electricity : Coulomb's law, Electric field, Intensity of electric field, Electric Potential, Capacitance, capacitors in series and parallel, Ohm's law, resistance, conductance, resistivity, conductivity, series and parallel combination of resistors, problems, Wheatstone bridge, meter bridge, potentiometer, comparison of emf of cells , internal resistance of cell, heating effect of electric current.						
	3.2	Magnetism : Magnetic field due to magnet and current carrying conductor, Intensity of magnetic field, Magnetic induction B, types of magnetic materials.						
SECTION-II								
Unit & Sub-Unit	Topics/Sub-topics							
4	4	Optics and Sound	12	16	CO4	40%	40%	20%
	4.1	Wave theory of light: Huygen's theory, wavefronts, wave normal, laws of reflection and refraction, total internal reflection, dispersion, angle of deviation, problems						
	4.2	Interference and diffraction: Principle of superposition, constructive and destructive interference, conditions to obtain steady interference pattern, Young's double slit experiment, diffraction, single slit and many slit diffraction, grating, applications, problems.						

	4.3	Sound :Newton's equation for velocity of sound, Laplace's correction, free and forced vibrations, Resonance, determine velocity of sound using resonance tube, end correction.						
5	5	Heat and thermodynamics:	10	12	CO5	40%	40%	20%
	5.1	Gas Laws: Boyle's law, Charle's law, Gay-Lussac's law, Kelvin scale of temperature, General Gas Equation, universal gas constant, N.T.P., principal specific heats and relation between them, problems.						
	5.2	Expansion , transmission of heat and laws of Thermodynamics: Expansion of solids –Linear, aerial and cubical, relation between them, modes of transmission of heat, co-efficient of thermal conductivity, experiment to find co-efficient of thermal conductivity of good and bad conductors, applications.						
6	6	Modern Physics	10	12	CO6	40%	40%	20%
	6.1	X-Rays: Production of X-rays, continuous and characteristic X-rays, properties and applications of X-rays, Mosley's law, problems						
	6.2	Photo-electric effect: Photo-electric effect, laws and characteristics of photo-electric effect, Einstein's photo-electric equation, problems, construction, working and applications of photocells.						
	6.3	Lasers : Properties, basics of production, types of Lasers, applications in Engineering.						
	6.4	Optical Fibers : Introduction, Principle of working, Types, applications						
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.	1.	Use of Vernier Caliper and observations with Travelling Microscope	2	CO1
2.	1.	Use of Micrometer Screw Gauge	2	CO1
3.	2.	Determination of surface Tension of a liquid using capillary action	2	CO2
4.	2.	Determination of coefficient of viscosity of liquid by Stoke's method	2	CO2
5.	3.	To verify Ohm's law and find specific resistance of material of wire	2	CO3
6.	3.	To find Galvanometer resistance using Meter Bridge	2	CO3
7.	3.	To find unknown resistance and verify laws of resistances using Meter Bridge (Resistances in Series and Parallel)	2	CO3
8.	3.	To compare emfs of cells using Potentiometer	2	CO3
9.	4.	To find Refractive Index of glass slab by Snell's law	2	CO4
10.	6.	To find wavelength of Laser light using diffraction grating	2	CO4
11.	4	To find velocity of sound in air using Resonance Tube	2	CO4
12.	5	To find coefficient of Thermal Conductivity of a good conductor by Searle's method.	2	CO5

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

*Practical exam to be conducted by internal examiners.

Text Books:

Sr. No.	Author	Title	Publisher and Edition
1.		X1th Standard Physics Text Book	H.SC. Board , Maharashtra or NCERT
2.		X11th Standard Physics Text Book	H.Sc Board, Maharashtra, or NCERT

Reference books and Websites:

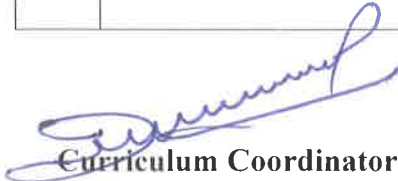
Sr. No.	Author	Title	Publisher and Edition
1.	Halliday D., Resnick .R ,& Walker	Fundamentals of Physics extended	Wiley India, New Delhi, 8 th edition
2.	Serway R.A. & Jewett Jr. J.W.	Physics for Scientists & Engineers	Cengage Learning, New Delhi, 6 th edition


D.P. Kulkarni
Sem I, DTM, VJTI

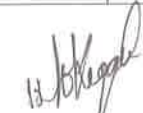
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3.	Verma H.C.	Concepts of Physics , Part I & II	Bharti Bhavan, New Delhi
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Curriculum Coordinator


Head
Diploma in _____


Dean - Diploma



DIPLOMA PROGRAMME	: Diploma in Textile Manufacture
PROGRAMME CODE	: DTM
SEMESTER	: Second.
COURSE TITLE	: Engineering Mechanics
COURSE CODE	: 176ST23

Teaching & Examination Scheme

Teaching Scheme				Paper Hours	Examination Scheme										Total Marks	
L	T	P	C R		Theory		Test	Total		Pract		Oral		Termwork		
					Max	Min		Max	Min	Max	Min	Max	Min	Max		Min
3	-	2	5	3	80	32	20	100	40	-	-	-	-	25	10	125

Course Objectives:

This course in Engineering Mechanics is designed to cover the applications of the principles of Mechanics of Engineering in general and Civil engineering in particular. This deals with static forces on the structures and bodies in motion and principles of equilibrium.

The laboratory work covered under this course will provide suitable learning experiences to develop the desired abilities, skills and attitude to analyze and solve the problems encountered in Textile Manufacturing .

COURSE OUTCOMES:

Student should be able to

CO1	Understand and define the fundamental concepts of Engineering Mechanics and apply the concept of resolution & composition of forces. Understand concept of equilibrium, free body diagrams, special supports , solve body
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Dr. D. P. Kulkarni

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	reaction and beam reaction problems, by analytical and graphical method and solve problems on friction.
CO2	Understand the concept of kinematics and solve the numerical based on projectile and angular motion. Understand the concept of kinetics and solve the numerical based on work, power and energy.
CO3	Study simple machines. Understand MA, VR, efficiency of simple Machines. Perform the experiments based simple machines and plot the graphs from the obtained results to find law of machine..

Course Content:

SECTION-I							
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level
1 1.1	Fundamental concepts: Statics, Dynamics, Kinematics, Kinetics, Concept of force system of forces: Co-planar Concurrent, parallel, Principle of transmissibility of a force.	03	06	1		U	A
2 2.1	Resolution and Composition of forces: Resolution of a force, concept of a moment of a force, laws of moments and couples, Composition of co-planar, concurrent, non-concurrent, parallel forces, Resultant of a general system of co-planer forces.	10	17	1		U	A
3 3.1	Equilibrium: Definition, Relation between resultant & equilibrant, conditions of equilibrium, Types of support-conditions, roller, hinge & fixed. Free body diagram, simply supported & over hanging beams	11	17	1		U	A

Dr. D.P. Kulkarni

(M)



40

SECTION-II								
Unit & Sub-Unit		Topics/Sub-topics						
5	5.1	Graphic Statics: Representation of a force, Bow's Notation, Space Diagram, Force diagram, Funicular polygon, Condition of equilibrium, Reaction of beams subjected to uniformly distributed and concentrated loads.	05	7	1		U	A
6	6.1	Friction: Laws of friction, terms used: Co-efficient of friction, angle of friction, repose, equilibrium of bodies on level and inclined planes.	05	7	1		U	A
7	7.1	Projectile: Review of rectilinear motion, Motion of projectile, Time of flight, Maximum height and horizontal range, relation between angle of projection and range, maximum horizontal range.	03	7	2		U	A
8	8.1	Angular Motion: Definition, Angular displacement, Angular velocity, Angular acceleration, Tangential and Radial components equations of circular motion, Relation between rectilinear and circular motion super elevation.	04	6	2		U	A
9	9.1	Work, Power and Energy: Definition of terms, form of energy, law of conservation of energy, Relation between force, mass & acceleration and its application.	03	6	2	R	U	A
10	10.1	Simple Mechanics: Definition of terms used: mechanical advantage, velocity ratio, efficiency, friction in the machine, law of machine, conditions of the	04	7	3	R	U	A

Dr. A. P. Kulkarni

1/3/2



41

		reversibility, study of simple machines : simple screw jack, axle and wheel, differential axle and wheel, worm and worm wheel, single purchase crab.						
Numerical Questions will be asked on all of the above topics.								
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	1	Law of polygon of forces	2	1
2	2	Reaction of Simply supported Beams.	2	1
3	3	Forces in members of jib crane.	2	1
4	4	Simple screw jack.	2	3
5	5	Differential axle and wheel	2	3
		Two half-imperial size drawing sheets in the graphic static with minimum five problems out of the following:		
6	6.1	Resultant of concurrent forces.	1	1

Dr. A. P. Kulkarni

(Signature)



42

DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE MANUFACTURES
PROGRAMME CODE	: DTM
SEMESTER	: SECOND
COURSE TITLE	: YARN MANUFACTURE- I
COURSE CODE	: 176TM24

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	-	3	3	3	80	32	20	100	40	-	-	-	-	50	20	150

Course Objectives:

Students must be able to,

- 1) Understand the process of picking, ginning, baling and be able to describe the working and construction of the ginning machines.
- 2) State the objects of the spinning preparatory machines i.e. blowroom and card and describe in detail the construction and working of the blowroom machines and the card.
- 3) Calculate speeds, draft, production, performance indices and operating parameters of blowroom and card.

Course Outcomes:

Student should be able to

CO1	Recall the basic operations of picking, ginning, baling and blowroom and the definitions of the yarn numbering systems.
CO2	Describe the construction and working of the ginning and blowroom machines.
CO3	Apply the formulae in converting one yarn number to another and to calculate cleaning index, draft and production in blowroom.
CO4	State the objects of the card and state the objects.
CO5	Describe, discuss and explain the various operating zones of the card.
CO6	Apply the formulae for the calculation of speed, production, draft and point density on the



	card.
CO7	Plan and perform experiments related to blowroom machines and the card.
CO8	To apply engineering knowledge for calculating speeds of various parts of machines, use of engineering tools for dismantling and setting of parts safely.

Course Content:

SECTION-I							
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level
1	Picking, Ginning and Baling	2	8				
1.1	Introduction to the picking of cotton, ginning and baling. Manual and Mechanical picking	1	4	CO1	100%		
1.3	Construction of the ginning machines- saw gin and McCarthy gin.	1	4	CO2		100%	
2	Blowroom	12	14				
2.1	Basic operations in blowroom, the feed material and the blowroom machine components.	4	6	CO1	100%		
2.2	Construction of machines for opening, coarse cleaning, blending, intermediate cleaning, fine cleaning and de-dusting. Study of the scutcher, transport and control of material, metal extractors and waste management.	8	8	CO2		100%	
3	Calculations on Yarn Numbering and Blowroom	10	18				
3.1	Definitions of the direct and indirect yarn numbering systems- Tex, Denier, English count, Worsted count and Woollen count.	4	6	CO1	100%		
3.2	Conversion from one system of yarn numbering to another. Calculations related to the performance of blowroom- Cleaning index, draft and production.	6	12	CO3			100%

Dr. D. P. Kulkarni

(M2)



44

SECTION-II							
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level
4	Carding	9	16				
1.1	Objectives of the card- Individualisation, elimination of impurities, dust and short fibres, disentangling of neps, fibre blending, orientation and sliver formation. Identification of the various parts of the card.	4	10	CO4	100%		
1.2	Construction and working of the operating zones of the card- Chute feed, licker in zone, cylinder, auxiliary carding devices, flats, doffing and detaching. Tandem card.	5	6	CO5		100%	
2	Card clothing and Autolevelling	7	12				
2.1	Flexible, semi-rigid and metallic card clothing- Geometry and arrangement, carding and doffing disposition. Principle of medium and long term autolevelling.	5	6	CO5		100%	
2.2	Maintenance and settings on the card – Stripping, grinding, burnishing and the basics of card settings with values.	2	6	CO4	100%		
3	Calculations on the card	8	12				
3.1	Card drive and calculations related to speed, draft and production of the card. Change places on the card. Calculation of point density.	8	12	CO6			100%
		48	80				
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.

Dr. P. P. Kulkarni

(M22)



45

List of Practicals/Assignments/Tutorials:

Sr. No.	Unit	Practical/Assignment	Approx. Hours	CO
1		Study of laboratory model of ginning machines.	3	CO7
2		General study of hopper bale breaker and hopper feeder	3	CO7
3		Study of the step cleaner	3	CO7
4		Study of the Axi-flow	3	CO7
5		General study of the scutcher and calculation of production.	3	CO8
6		Study of the chute feed card, passage of cotton and different parts of the card.	3	CO7
7		Study of the gearing diagram, calculation of speed of the various parts, total draft, intermediate draft, draft constant and production constant, change places on card and their effects.	3	CO8
8		Study the feed mechanism and licker in. Construction details, dismantling and resetting of the feed parts.	3	CO8
9		Study the constructional details and setting of the cylinder and doffer, flexible bends, setting of flats, drive to flats and flat stripping comb.	3	CO8
10		Study the doffer comb box mechanism, coiling and can driving mechanism.	3	CO8
* Minimum 8 and maximum 12 practicals/experiment sessions to be included in a course in a term				

Dr. D.P. Kelkar

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Text Books:

Sr. No.	Author	Title	Publisher and Edition
1	Werner Klein	Technology of short-staple spinning- Volume 1	The Textile Institute
2	Werner Klein	Blowroom and Carding- Volume 2	The Textile Institute

Reference books and Websites:

Sr. No.	Author	Title	Publisher and Edition
1	Dr A R Khare	Elements of raw cotton and blowroom	Sai book centre
2	Dr A R Khare	Elements of carding and drawframe	Sai book centre
3	http://www.rieter.com/en/rikipedia/articles/fibre-preparation/		

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1/3/2



DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE MANUFACTURES
PROGRAMME CODE	: DTM
SEMESTER	: SECOND
COURSE TITLE	: FABRIC MANUFACTURE- I
COURSE CODE	: 176TM25

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	-	3	6	3	80	32	20	100	40	-	-			50	20	150

Course Objectives:

Students must be able to,

- 1) Understand process flow chart for weaving preparatory
- 2) Identify the various types used in winding, pirn winding, warping and sizing packages.
- 3) Learning the first process in winding, pirn winding, warping and sizing
- 4) Learn the construction and working of the various machines used in winding, pirn winding, warping and sizing.
- 5) Calculate the production and other calculation related to the performance of winding, pirn winding, warping and sizing.

Course Outcomes:

Student should be able to

CO1	Identify different winding packages and understand the basic concept of winding process , working construction of different types of winding machines and calculations related to production , efficiency
CO2	Understand construction working and settings of different machines in pirn winding process and working, construction of pirn winding machines and calculations related to production and efficiency

Dr. D.P. Kulkarni

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48

	6.2	Resultant of parallel forces	1	1
7	7.1	Resultant of non-concurrent, non-parallel forces.	1	1
	7.2	Reactions of a simply supported beam.	1	1
8	8.1	Equilibrium of bodies.	1	1
* Minimum 8 and maximum 12 Practical's /Experiment sessions to be included in a course in a term				

Text Books:

Sr. No.	Author	Title	Publisher and Edition
01	S. B. Junnarkar,	Applied mechanics	17th edition ,Revised, 2010, Publisher- Charotar Publishing House Pvt. Ltd.
02	R. K. BANSAL	Engineering mechanics	3 rd Revised Edition 2015, Laxmi Publications Pvt. Ltd.

Reference books and Websites:

Sr. No.	Author	Title	Publisher and Edition
01	Dadhe, Jamdar and Walawalkar	Fundamentals of Applied Mechanics	Second edition 2006, Publisher-Sarita Prakashan.
02	www.nptel.ac.in		

Curriculum Coordinator

Head

Dean - Diploma

Diploma in _____



CO3	Understand construction working and settings of different machines in warping and working, construction of different warping machines and calculations related to production and efficiency
CO4	Understand the scope and approach of process control in winding, warping and pirn winding and methodology to control these processes.
CO5	Plan and perform experiment on winding, warping and sizing
CO6	To apply engineering knowledge for calculating speeds of various parts of machines

Course Content:

SECTION-I							
Unit & Sub-Unit	Topics/Sub-topics	Hours	Marks	CO	R Level	U Level	A Level
1	Winding	16	26				
1.1	Introduction to winding, Object of winding, Cross wound and Parallel wound packages And their characteristics. Package drive and Traverse motions. Close and Open wound Packages. Density of Package, Soft and hard Wound packages, Random and precision winding	06	08	CO1	40%	60%	
1.2	Different types of tensioning devices used on winding machine. Types of yarn guides used on winding machines. Mechanical and Electrical yarn clearing devices. Introduction to Knotter and Splicer, Types of kbots, Types of splicing, Features of Modern winding machines. Package defects in winding	08	12	CO1	40%	60%	
1.3	Calculations related to production, efficiency, winding speed, traverse speed, angle of wind, angle of wind	02	06	CO1	20%	20%	60%
2	Pirn winding	8	14				

Dr. P. P. Kulkarni

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50

	2.1	Introduction to automatic Pirn winding machine, Objects pirn winding, Passage of material through the pirn winding machine. Factors affecting build of a pirn. Direct weft and its advantages, Rewound weft and its advantages, Package defects in pirn winding,	6	10	CO2			
	2.2	Calculations related to production, efficiency of pirn winding machine	2	04	CO2	20%	20%	60%
SECTION II								
Unit & Sub-Unit	Topics/Sub-topics							
3		Warping	8	16				
	3.1	Objectives of warping. Classification of warping machine and their study, Study and passage of warp sheet through beam warping machine. Study of sectional warping machine, Passage of warp sheet through sectional warping machine, Different types of creels, Features of modern warping and sectional warping machines, Warping beam defects and hard waste control	6	10	CO3	40%	60%	
	3.2	Calculation related to production, efficiency and speed of warping machine	2	04	CO3	20%	20%	60%
4		Process control in winding, pirn winding and warping	16	24				
	4.1	Introduction to scope of process control and its approach, Methodology of direct control, Setting Norms and Schedule of Checks, Machinery audit	04	06	CO4	40%	40%	20%
	4.2	Process control in winding: Scope and approach, Control of productivity, Control of hard waste	04	06	CO4	40%	40%	20%
	4.3	Process control in pirn winding: Scope and approach, Minimising end breaks, Control of hard waste	04	06	CO4	40%	40%	20%
	4.4	Process control in warping: Scope and approach, Minimising ends breaks at warping, Quality of warper's beam, Control of productivity	04	06	CO4	40%	40%	20%
			48	80				

D. P. Kulkarni

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51

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		Study and passage of Franz Muller winding machines.	3	CO5
2		Study and passage of Mettler winding machines.	3	CO5
3		Calculations of winding speed, surface speed, traverse speed on Franz Muller winding machine	3	CO6
4		Calculations of winding speed, surface speed, traverse speed on Mettler winding machine	3	CO6
5		Study and passage of material on SSM winding machine	3	CO5
6		Calculation of winding speed, traverse speed and surface speed on SSM winding machine	3	CO6
7		Study and passage of material through Sectional warping machine	3	CO5
8		To study Drive to sizing machine and general study.	3	CO5
9		To study Sow box, Drying cylinder, Steam trap, Measuring and marking motion.	3	CO6
* Minimum 8 and maximum 12 practicals/experiment sessions to be included in a course in a term				

Dr. D.P. Kulkarni

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Text Books:

Sr. No.	Author	Title	Publisher and Edition
1	Dr. M K Talukdar	Winding, Warping-	
2	M.C. Paliwal and P. D. Kimothi	Process control in weaving	ATIRA Monograph

Reference books and Websites:

Sr. No.	Author	Title	Publisher and Edition
1	P. R. Lord and M. H. Mohamed	Weaving : Conversion of yarn to fabric	Merrow publishing Co. Ltd., England, 2 nd edition, 1988
2		Yarn Winding	NCUTE Publications

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DIPLOMA PROGRAMME	: DIPLOMA
PROGRAMME CODE	: DTM
SEMESTER	: SECOND
COURSE TITLE	: LIFE SKILL
COURSE CODE	: 171HM26

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	-	2	-								50	20			50

Course Objectives:

Making students proficient in oral skills through various activities that will enable them to perform efficiently during interviews, meetings, seminars, conferences, group discussions and in negotiations and conflict resolutions. Improving the technical communication through critical analysis of a situation, drawing appropriate conclusions, presenting them precisely. Developing the personality of the future technologists by inculcating proper interactive skills in them and improving their power of expression required for efficacious communication in verbal and non-verbal form to achieve success in professional world.

Course Outcomes:

Student should be able to

CO1	To develop oral skills and self confidence
CO2	To develop analytical ability and technical communication skills
CO3	To develop interactive skills and power of expression

Course Content :

Unit & Sub-Unit	Topics/Sub-topics		Hours	Marks	CO	R Level	U Level	A Level
UNIT	I. ORAL SKILLS a) Dialogue And Role Play	<ul style="list-style-type: none"> To improve interactive skills & conversational skills 	12	09	CO 1	30%	30%	40%

Dr. D.P. Kulkarni

1/3/18



I	b) Group Discussion c) Elocution d) Extempore	<ul style="list-style-type: none"> • Leadership qualities and Team spirit • To boost self-confidence, Power of expression, 						
UNIVERSITY	II. TECHNICAL COMMUNICATION a) Editing b) Critical-Analysis of articles /write up. c) Report Writing /Drafting proposals	<ul style="list-style-type: none"> • Writing Sills • To develop critical thinking and analytical ability. • Developing technical communication and conciseness in writing 	10	07	CO 2	20%	20%	60%
UNIVERSITY	III. GROOMING AND INTERACTIVE SKILLS a) Audio-visual Communication > Language Laboratory > Power Point Presentation > Videos b) Communication and Body language > Kinesics > Haptics > Proxemics > Vocalics > Chronemics c) Manners and Etiquette > Table Manners	<ul style="list-style-type: none"> • Acquiring refined language and self-learning techniques. • Using technologies to collect, compile, analyse and present data precisely in an appealing manner. • Developing ability to communicate efficiently and effectively. • Moulding and enhancing one's 	10	09	CO 3	20%	30%	50%

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	➤ Telephone Etiquettes	personality.						
	➤ Personal Grooming							
	➤ Voice Culture							
	Total		=	32	25			
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:

1. Writing a dialogue based on the given situation.
2. Dialogue delivery through Role Play
3. Conducting group discussion on a given topic
4. Writing critical analysis of an article
5. Writing short reports pertaining to industry
6. Drafting applications as per industry situations
7. Drafting proposals
8. Delivering a speech in public
9. Presentation skills through power point presentation on a given topic
10. Phonetics exercises in language laboratory

Text Books:

Sr. No.	Author	Title	Publisher and Edition
1.	Board of Editors L.V Shende, T.K Tytus, N.S Pathan, R.G Munghate, Azizul Hugue, Sambhaji Warkad	The Communicator	Orient Blackswan,2008
2.	L.V Shende, T.K Tytus, N.S Pathan, R.G Munghate, Azizul Hugue, Sambhaji Warkad	Vibrant English	Orient Blackswan,2013

Dr. D.P. Kulkarni
Sem I, DTM, VJTI

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Reference books and Websites:

Sr. No.	Author	Title	Publisher and Edition
1.	Gupta C. B.	Contemporary Management	APH, New Delhi, First edition, 1992
2.	Sekaran Uma	Organisational Behaviour	Tata Mcgraw Hill, New Delhi, Second edition, 2008
3.	Raman Meenakshi, Sharma Sangeeta	Technical Communication	OUP, India, Second impression, 2004
4.	K. Purushotham	English for Fluency	Orient Blackswan, 2013

Curriculum Coordinators

- 1. Vandana Mishra
- 2. Tanvi Joshi

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

(Signature)
Dean - Diploma



(Signature)
Sem I, DTM, VJTI

(Signature)

DIPLOMA PROGRAMME	: DIPLOMA IN TEXTILE MANUFACTURES
PROGRAMME CODE	: DTM
SEMESTER	: SECOND
COURSE TITLE	: COMPUTER FUNDAMENTALS
COURSE CODE	: 176TM27

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	-	-	-	-	-	-	-	-	-	-	-	25	10	25

Course Objectives:

Students must be able to,

- 1) Basic understanding of information technology and the knowledge of Computer which is essential to deal with the global situation
- 2) The Application Software e.g. MS Word & PowerPoint will equip students for communication and presentation.
- 3) Application software such as Excel and Access.
- 4) Excel is the calculating tool for general purpose as well as scientific work.
- 5) Access a data base is a powerful tool to store the huge amount of information and retrieve the desired information.

Course Outcomes:

Student should be able to

CO1	Acquire basic knowledge about operating system and basic nomenclature
CO2	Understand the word processing, related software and various short keys used
CO3	Understand MS Excel, working and other function
CO4	Study the presentation related software
CO5	Study the data based management

Dr. D.P. Karkar

1/3/20



CO6	Study the basic of C programming
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Course Content:

		Section 1			
Unit & Sub-Unit		Topics/Sub-topics	Hours	CO	
1		Operating system	04		
	1.1	Windows desktop, start menu, drives, folders, my computer, control panel		CO1	
	1.2	Types of files like data files, image files, audio files and their extensions		CO1	
2		Word processing	06		
	2.1	Various commands like cut, copy and paste		CO2	
	2.2	Creating a document and editing a document, PDF files		CO2	
	2.3	Acrobat Reader and Adobe page maker system utilities like Win zip and ant virus programs		CO2	
3		Spread-sheets	04		
	3.1	MS Excel, concept of worksheet, graphs		CO3	
	3.2	Mathematical and other functions		CO3	
		Section 2			
Unit & Sub-Unit		Topics/Sub-topics			
4		Presentation software	06		
	4.1	MS Power Point – basic concepts		CO4	
	4.2	Slide shows animation effects and background		CO4	

Sem I, DTM, VJTI

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1/3/22

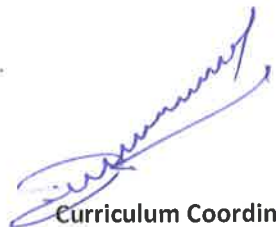


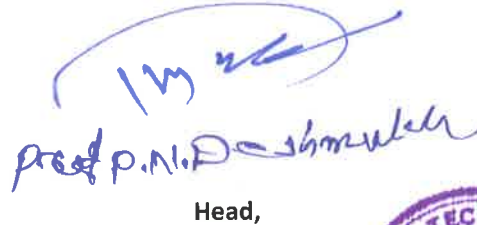
5		Data Based Management	04	
	5.1	MS Access		CO5
	5.2	Creating data based objects like table, forms, queries and reports		CO5
6		Basic of C program		
	6.1	Simple C program with basic input, output statements		CO6
	6.2	Use of if, while and for statement		CO6
		Total	32	

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.

Reference books and Websites:

Sr. No.	Author	Title	Publisher and Edition
1	Dr. V. Rajaram	Computer fundamentals	PHI Learning
2	Dr. Balaguruswami	C Programing	
3		User's manuals for DOS, Windows, Unix/ Linux	


Curriculum Coordinator


Head,


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Sem I, DTM, VITI


Dr. A. P. Kerkar



60