DKTE Society's
TEXTILE & ENGINEERING INSTITUTE

Rajwada, Ichalkaranji 416115

(An Autonomous Institute)

DEPARTMENT: TEXTILES

CURRICULUM
B. Tech. Fashion Technology Program

First Year

With Effect From

2023-2024

Promoting Excellence in Teaching
Learning & Research

First Year B. Tech - Fashion Technology
Semester-I

Sr. No.	Course Code	Course Title	Course Category	Teaching scheme				Course Credits
				L	T	P	Contact Hrs./wk	
1	01TFL151	Mathematics & Statistics- I	BSC	3			3	3
2	01TFL152	Applied Mechanics	ESC	3			3	3
3	01TFL153	Electrical Technology	ESC	3			3	3
4	01TFL154	Textile Fibres	BSC	3			3	3
5	01TFL101	Fashion and Design Concepts	PCC	3			3	3
6	01TFP102	Fashion and Design Concepts Lab	PCC			2	2	1
7	01TFP155	Electrical Technology Lab	AEC01			2	2	1
8	01TFP156	Functional English - I Lab	AEC02			2	2	1
9	01TFP157	Idea Lab	VSEC			2	2	1
		Total		**15**	**0**	**8**	**23**	**19**

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester –I)
01TFL151: Mathematics and Statistics- I

Teaching Scheme: Lectures: 3 Hrs/Week	Credits 3	Evaluation Scheme: SE 1: 25 Marks SE 2: 25 Marks SEE: 50 Marks

Course Objectives:

1. Introduce students with Normal form, Echelon form and Rank of matrix& use them to solve the system of equations. Also introduce students with the theory of finding derivative numerically & use it to solve problems of numerical differentiation.

2. Introduce students with the theory of finding partial derivatives & apply it for finding errors, approximations maxima and minima.

3. Introduce students with basic concept of statistical data, collection and types of data, classification, graphical representation, frequency distribution with construction, measures of central tendency and dispersion. Prepare them to solve problem of these concepts with interpretation.

4. Introduce students with concept of skewness and kurtosis, measures of skewness and kurtosis. Prepare them to solve and interpret problems of skewness.

Course Outcomes:

At the end of the course, students will be able to

1. The theory of normal form, echelon form and rank of matrix & apply it to solve system of equations, the theory of finding derivative numerically and also able to solve problems of numerical differentiation.

2. The theory of finding derivative partially and able to solve the problems of application of partial differentiation.

3. Concept of statistical data collection, types of data, classification, graphical representation, frequency distribution and its construction, central tendency and dispersion of data, measures of central tendency and dispersion. Also, they are able to analyze and interpret given statistical data using these concepts.

4. Concept of skewness and kurtosis, measures of skewness and kurtosis. Also, they are able to solve and interpret problems of skewness.

Course Contents		
Unit I	**Matrix**	**05 Hours**
Rank of matrix (Normal form of matrix, Echelon form of Matrix), Solution of simultaneous linear equations (Homogeneous & Non- Homogeneous)		
Unit II	**Numerical Differentiation**	**05 Hours**
Newton's forward & backward difference formulae, Sterling's central difference formula. Newton's divided difference formula.		

Unit III	Partial Differentiation	10 Hours

Introduction of Partial Differentiation, Differentiation of implicit functions, Euler's theorem on homogeneous function. Jacobean (J.J'=1) only, Application of PD for Errors- approximations and maxima-minima.

Unit IV	Introduction of Statistics	08 Hours

Definitions of Population, Variable, Attribute, Census Survey, Sample Survey, Random sample. Raw statistical data, collection, classification, Frequency distribution, class limits & boundary, class width, mid-point. Histogram, Frequency polygon, Frequency curve. Measures of central tendency: Arithmetic Mean (A.M.), Median, Mode, Combined Mean & Partition values: Quartiles Deciles and Percentiles with computation.

Unit V	Measures of dispersion	07 Hours

Range, Quartile deviation, Mean deviation, Standard deviation as Absolute measures of dispersion, Coefficient of range, quartile deviation, mean deviation, coefficient of variation as Relative measures of dispersion, consistency of data & computation.

Unit VI	Measures of Skewness& kurtosis	05 Hours

Skewness, types, Karl Pearson's & Bowley's coefficient of skewness & Computation. Kurtosis definition and types only. (No Examples of Kurtosis)

Reference Books:

1. A textbook of applied mathematics Vol.-I & II by P.N. & J.N. Wartikar
2. Higher engineering mathematics by B.S. Grewal
3. A textbook of applied mathematics by Bali, Saxena, Iyangar.
4. Mathematical Statistics by J.E. Fruend.
5. Probability & Statistics for engineers by Johnson.
6. Statistical methods by Kumbhojkar.

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester– I)
01TFL152: Applied Mechanics

Teaching Scheme: Lectures: 03 Hrs/Week	Credits 3	Evaluation Scheme: SE 1: 25 Marks SE 2: 25 Marks SEE: 50 Marks

Course Objectives:

1. To explain the concept of forces, couple and laws related to force with basic principles and theorems.
2. To analyze the concepts like static equilibrium, support reactions, friction and moment of inertia to solve basic engineering problems.
3. To analyze the effect of various types of forces on the bodies in dynamic equilibrium conditions to solve basic engineering problems.
4. To explain the concept of transmission of motion and power in various machines by using various drives, bearings and simple lifting machines used in textiles.

Course Outcomes:

At the end of the course, students will be able to

1. Use the concept of forces and various laws related to force with basic principles, theorems.
2. Use concepts like equilibrium, support reactions, friction and moment of inertia to solve basic engineering problems.
3. Analyze the effect of various types of forces on the bodies in dynamic conditions to solve basic engineering problems.
4. Interpret the concept of transmission of motion and power in various machines by using various drives, bearings and simple lifting machines used in textiles.

Course Contents		
Unit I	**Fundamentals of statics**	**05 Hours**

Statics, dynamics, Force, system of forces, Resultant force and equilibrant, principle of transmissibility of force, moment of force. Couple, Law of parallelogram of forces, Varignon's theorem, Composition and resolution of Coplanar concurrent and non-concurrent forces.

Unit II	**Equilibrium**	**10 Hours**

Equilibrium of Coplanar forces, Conditions of equilibrium, free body diagram, Lami's theorem.
Friction: Introduction to friction, types of friction, Laws of friction. Cone of Friction.
Beams: Types of beams, Types of Loads, Types of supports, Analysis of Simply supported beams.

Unit III	**Moment of Inertia**	**06 Hours**

Centroid and Centre of gravity, Centroid of composite areas, Radius of Gyration, parallel axis theorem, perpendicular axis theorem, Moment of inertia of composite sections

Unit IV	Lifting Machines	04 Hours

Mechanical advantage, velocity ratio, efficiency, law of machine, effort lost in friction, load lost in friction, Study and numerical examples on simple machines- Simple screw jack, Simple axle and wheel, differential axle and wheel, worm and worm wheel.

Unit V	Kinematics and Kinetics	08 Hours

Kinematics of Linear motion: Equations of linear motion with constant and variable acceleration, motion under gravity.

Kinematics of Angular motion: Relation between angular motion & linear motion, Equations of angular motion, Centrifugal & centripetal forces, Motion along a curved path, Banking of roads.

Kinetics: Newton's laws of motion, Mass moment of inertia, D'Alemberts principle, work, power, energy, impulse, Work- Energy Principle, Impulse- Momentum Principle, Principle of conservation of energy.

Unit VI	Transmission of motion and power	06 Hours

Belt, rope, chain and gear drives, P.I.V. drives, Type of gears and gear drives, Gear trains, velocity ratio, advantages of gear drives, uses in textile machines, Concept of epicyclic gearing. Types of bearing and their applications (Only theory, no numerical examples on this topic)

Reference Books:

1. Engineering Mechanics by R. K. Bansal and Sanjay Bansal, Laxmi Publications
2. Applied Mechanics by R.S. Khurmi, S. Chand Publications.
3. Engineering Mechanics by S. S. Bhavikatti, New Age International Pvt. Ltd.
4. Engineering Mechanics by S. Ramamrutham, DhanpatRai and Sons.
5. Fundamentals of Engineering Mechanics by S. Rajasekaran, Sankarasubramanian, Vikas Publishing House.
6. Applied Mechanics by S.N. Saluja, SatyaPrakashan, New Delhi.
7. Engineering Mechanics by S. B. Junnarkar, Charotar Publishing House Pvt. Ltd.
8. Vector Mechanics for Engineers Vol. I & II, by Beer & Jonhstan, Tata Mc-Graw Hill Publication.

DKTES Textile and Engineering Institute, Ichalkaranji
Frist Year B. Tech. (Fashion Technology) (Semester I)
01TFL153: Electrical Technology

Teaching Scheme: Lectures: 3 Hrs/Week	Credits 03	Evaluation Scheme: SE 1: 25 Marks SE 2: 25 Marks SEE: 50 Marks

Course Objectives:

1. To understand basic concepts of Electrical and Magnetic circuits.
2. To understand concepts of elements and parameters in Single Phase circuit.
3. To understand concepts of elements and parameters in three phase AC circuits and Three phase Induction motor and Transformer.
4. To implement Electrical Protection and Safety devices and importance Energy Efficient Systems.

Course Outcomes:

At the end of the course, students will be able to

1. To solve and design Electrical and Magnetic circuit.
2. To solve and design Single phase A.C. circuit.
3. To distribute three phase Electrical energy and use of Induction motor and Transformer.
4. To implement Electrical Protection and Safety devices and importance Energy Efficient Systems.

Course Contents		
Unit I	**Electrical Circuit**	**07 Hours**

Basic electrical quantities, Concept of E.M.F, Potential Difference, current, Resistance, Ohm's Law, Kirchhoff's laws, mesh and node analysis, Energy conversations. Numericals.

Unit II	**Magnetic Circuit**	**07 Hours**

Flux, flux density, Reluctance, field intensity, permeability, mmf, comparison of Electric and Magnetic circuit, leakage and fringing, B-H, Numericals on simple magnetic circuit

Unit III	**Single phase A. C. circuit**	**06 Hours**

Faraday's Laws, Lenz's Law, self and mutual emfs, generation of sinusoidal E.M.F. in single phase alternator, R.M.S. & Average value, form factor, peak factor, Phasor representation, R-L, R-C, R-L-C series circuits, powers, power factor and its improvement capacitor method Numerical. Single line diagram.

Unit IV	**Three Phase A. C. circuit and Induction Motor**	**07 Hours**

Introduction to three phase supply and its advantages, Generation of three phase A.C. voltage, balanced system, relation between line and phase quantities in star and delta its numerical. Three Phase Induction Motor Working Principle, Constructional Details, Types, Rotating Magnetic field, Necessity of starters, Speed Control by variable Frequency Drive (VFD) used in Ring frame, motors used in Textile Industry.

Unit V	Transformer	07 Hours

Construction, operating principle, Types, EMF equation, Concept of Ideal and practical Transformer, Transformation Ratio, operation on No load and with load of ideal transformer, losses, efficiency, voltage regulation, its Numerical. Use in Textile Industry.

Unit VI	Electrical Protecting Devices.	05 Hours

Importance of Earthing, Fuse (Rewirable and HRC), MCB. Construction of CFL, LED lamp, Introduction of Energy efficient system & EEM motors. Concept of Power Quality.

Reference Books:

1. Elements of electrical Engineering by U.A. Bakshi
2. Electrical Technology by U.A. Bakshi
3. Basic Electrical Engineering by B. H. Deshmukh
4. A text book in electrical technology by B. L. Thareja.
5. Fundamentals of Electrical Engineering by Ashfaq Husain
6. Basic Electrical Engineering by Mehta V.K. & Mehta Rohit
7. Basic Electrical Engineering by J.B. Gupta
8. Basic Electrical Engineering by DP Kothari, I J Nagrath

Supplementary Readings:
https://nptel.ac.in
https://easyengineering.net/basic-electrical-engineering-by-bakshi-nw/

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester –I)
01TFL154: Textile Fibres

Teaching Scheme: Lectures: 3 Hrs/Week	Credits 3	Evaluation Scheme: SE 1: 25 Marks SE 2: 25 Marks SEE: 50 Marks

Course Objectives:
1. To explain the basics of textile fibres.
2. To describe the morphological and chemical structure of natural fibres.
3. To describe the manufacturing processes of manmade fibres.
4. To explain the properties of natural and manmade fibres.

Course Outcomes:
  At the end of the course, students will be able to
1. Explain the basics of textile fibres.
2. Describe the morphological and chemical structure of natural fibres.
3. Explain the manufacturing processes of manmade fibres.
4. Enunciate properties of natural and manmade fibres.

Course Contents		
Unit I	**Introduction**	**6 Hours**

Concepts of Fibre, Yarn and Fabric, Staple fibre, Filament, Regenerated fibre, Synthetic fibre, Degree of polymerization, Crystallinity, Orientation. Classification of fibres. Advantages and disadvantages of natural & manmade fibres. Characteristics of fibre forming polymer. Essential and desirable characteristics of textile fibres, The requirement of fibre formation, Introduction to Textile Value Chain.

Unit II	**Vegetable Fibres**	**6 Hours**

Cotton Fibre: Cultivation and harvesting, Development of fibre in seed, Morphological structure, Properties and applications of Cotton fibre. Bast Fibres: Retting and extraction process of Bast fibres, Properties and applications of Jute fibres. Introduction to other vegetable fibres.

Unit III	**Animal Fibres**	**6 Hours**

Wool: Types and grading of wool, Morphological structure, Properties and applications. Silk: Types of silk, Production of silk, Morphological structure, Properties and applications.

Unit IV	**Manmade Fibre Formation Technologies**	**4 Hours**

Melt Spinning, Dry Spinning, Wet Spinning, Advantages and disadvantages of these man made spinning technologies, Comparison between different man-made fibre formation technologies.

Unit V	**Manmade Fibres**	**10 Hours**

Polyester (Polyethylene Terephthalate): Manufacturing process, Properties and applications, Polyamide Fibres (Nylon 6 & Nylon 66): Manufacturing process, Properties and applications, Polyolefin Fibres (Polypropylene): Manufacturing process, Properties and applications. Polyacrylonitrile Fibre: Manufacturing process, Properties and applications. Polyurethane Fibres: Extensibility and recovery mechanism, Manufacturing process, Properties and applications

Unit VI	Regenerated Fibres	4 Hours

Viscose Rayon: Manufacturing process, Properties and applications. Introduction to other regenerated fibres.

Reference Books:

1. S.P. Mishra, A Textbook of Fibre Science and Technology, New Age International (P.) Limited, ISBN: 9788122412505 (2000).

2. J. Gordon Cook, Handbook of Textile Fibres. Volume 1 Natural Fibres, Woodhead Publishing Series in Textiles ISBN:978-1-85573-484-5 (1984).

3. J. Gordon Cook, Handbook of Textile Fibres. Volume 2 Man-Made Fibres, Woodhead Publishing Series in Textiles, ISBN: 978-1-85573-485-2 (1984).

4. Murthy, H. V. Sreenivasa, Introduction to Textile Fibres, Woodhead Publishing India in Textiles, ISBN:978-93-85059-57-5 (1984).

5. R. W. Moncrieff, Man-made Fibres, Heywood Books, Open Library-OL5656433M (1966).

6. V. R. Gowariker, Polymer Science, New Age International Publishers; Third edition, ISBN: 9387788644, (2019).

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester – I)
01TFL101: Fashion and Design Concepts

Teaching Scheme: Lectures: 3 Hrs/Week	Credits 3	Evaluation Scheme: SE 1: 25 Marks SE 2: 25 Marks SEE: 50 Marks

Course Objectives:
1. To explain elements of design.
2. To explain principles of design.
3. To explain body proportions.
4. To explain computer-aided fashion design.

Course Outcomes:
At the end of the course, students will be able to
1. Create designs using elements and principles of design.
2. Create designs using motif repetition.
3. Draw an 8-head figure.
4. Select appropriate tools and techniques for fashion drawing.

Course Contents		
Unit I	**Introduction to Fashion and Design**	**6 Hours**

Definition and meaning of fashion. Fashion life cycle. Fashion Terminologies - Fashion, Fad, Trend, Classic, High Fashion, Mass Fashion. Fashion Dissemination Theories. Types of fashion dresses: Haute couture, Designer's collection, and Branded Fashion. Definition and meaning of design, aspects of design: structural, functional & decorative. Optical illusion and its role in fashion designing. Career opportunities in fashion and design.

Unit II	**Elements of Design**	**6 Hours**

Characteristics and applications of various types of lines: Straight line, curvy line, vertical line, horizontal line, oblique line, solid line, dashed line, dotted line, etc. Shapes: Natural, geometrical, stylized, and abstract shapes. Silhouette: A-line, bell, balloon, V-line, Hourglass, etc. Size and Space. Texture - visual and tactile, Text.

Unit III	**Colour**	**6 Hours**

Source of colour. Light theory of colour. Pigment theory of colour. Colour properties: Hue, value and saturation. Munsell theory of colour. Colour schemes: Achromatic, monochromatic, analogous, complementary, split-complementary, triad, etc. Colour psychology.

Unit IV	**Principles of Design**	**6 Hours**

Balance: definition, aspects, types, role in designing. Rhythm: Definition, rhythm through repartition, Alteration, gradation, parallelism, radiation. Proportion: Relationship in scale between one element and another, or between a whole object and one of its parts. Emphasis: Varying degrees of dominance in design, visual weight of a composition. Harmony and unity.

Unit V	Motif Repetition and Patterns	6 Hours

Design development using motif repetition: square base, diamond base, full drop base, half drop base, brick base, ogee base, etc., Different types of patterns like stripes, checks, floral, animal, photo, typography, etc.

Unit VI	Fashion Drawing and CAD	6 Hours

Art materials: features, advantages, limitations and applications. Rendering techniques: Pen and ink techniques, and wash Techniques. Types of figures: Real figure, ideal figure, and fashion figure. Figure drawing versus fashion illustration. 8-head figure drawing. Advantages of CAD. Vector versus bitmap software. Tools and techniques used in vector and bitmap software.

Reference Books:

1. Fashion Sketchbook by Bina Abling (2012), Bloomsbury Publishing India Private Limited. ISBN: 1609012283
2. Fashion Designer's Handbook for Adobe Illustrator by Marianne Centner and Frances Vereker (2011), John Wiley & Sons. ISBN: 1119978114.
3. A Complete Guide to Fashion Designing by Davis (2008), Abhijeet Publications. ISBN: 8182471184.
4. Colour Forecasting by Tracy Diane and Tom Cassidy (2008), Wiley-Blackwell. ISBN: 9781405143776.
5. Figure Drawing for Fashion Design by Elisabetta Drudi (2010), The Pepin Press. ISBN: 9054961503.
6. Rendering Fashion, Fabric and Prints With Adobe Photoshop by Steve Greenberg and M. K. Colussy (2007), Pearson Education. ISBN: 8131709973.
7. Fashion Design: The Complete Guide by John Hopkins (2012), AVA Book Production Pvt. Ltd. ISBN: 9782940411528.
8. McKelvey, Kathryn and Munslow, Janine. Fashion Design: Process, Innovation and Practice. New York: John Wiley & Sons, 2003. ISBN: 0632055995.
9. Elements of Fashion and Apparel Design by G.J. Sumathi (2002), New Age International (P) Ltd. ISBN: 8122413714.
10. Inside fashion Design by Sharon L. Tate and Mona S. Edwards (2006), Pearson Education. ISBN: 8131706958.
11. The Language of Fashion Design: 26 Principles Every Fashion Designer Should Know by Laura Volpintesta (2014), Rockport Publishers. ISBN: 1592538215.

Supplementary Readings:

1. www.pantone.com
2. www.behance.net
3. www.pinterest.com

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester – I)
01TFP102: Fashion and Design Concepts Lab

Teaching Scheme: Practical: 2 Hrs/Week	Credits 1	Evaluation Scheme: CIE: 50 Marks

Course Objectives:
1. To explain elements of design.
2. To explain principles of design.
3. To explain body proportions.
4. To explain computer-aided fashion design.

Course Outcomes:
At the end of the course, students will be able to
1. Create designs using elements and principles of design.
2. Create designs using motif repetition.
3. Draw an 8-head figure.
4. Select appropriate tools and techniques for fashion drawing.

List of Experiments
1. Development of a colour wheel.
2. Develop value chart for colours.
3. Design development using various colour schemes.
4. Design development based on motif repetition.
5. Design development based on different types of patterns.
6. Study of human figure proportions.
7. Illustration of an eight head figure.
8. Study tools of bitmap and vector software.
9. Manipulate images using bitmap software.
10. Illustrate a garment using vector software.

Reference Books:
1. Fashion Sketchbook by Bina Abling (2012), Bloomsbury Publishing India Private Limited. ISBN: 1609012283
2. Fashion Designer's Handbook for Adobe Illustrator by Marianne Centner and Frances Vereker (2011), John Wiley & Sons. ISBN: 1119978114.
3. A Complete Guide to Fashion Designing by Davis (2008), Abhijeet Publications. ISBN: 8182471184.
4. Colour Forecasting by Tracy Diane and Tom Cassidy (2008), Wiley-Blackwell. ISBN:

9781405143776.

5. Figure Drawing for Fashion Design by Elisabetta Drudi (2010), The Pepin Press. ISBN: 9054961503.

6. Rendering Fashion, Fabric and Prints With Adobe Photoshop by Steve Greenberg and M. K. Colussy (2007), Pearson Education. ISBN: 8131709973.

7. Fashion Design: The Complete Guide by John Hopkins (2012), AVA Book Production Pvt. Ltd. ISBN: 9782940411528.

8. McKelvey, Kathryn and Munslow, Janine. Fashion Design: Process, Innovation and Practice. New York: John Wiley & Sons, 2003. ISBN: 0632055995.

9. Elements of Fashion and Apparel Design by G.J. Sumathi (2002), New Age International (P) Ltd. ISBN: 8122413714.

Supplementary Readings:

1. www.behance.net
2. www.pinterest.com

DKTES Textile and Engineering Institute, Ichalkaranji
Frist Year B. Tech. (Fashion Technology) (Semester II)
01TFP155: Electrical Technology Lab

Teaching Scheme: Practical: 2 Hrs/Week	Credits 01	Evaluation Scheme: CIE: 50 Marks

Course Objectives:

1. To understand basic concepts of Electrical and Magnetic circuits.
2. To understand concepts of elements and parameters in Single Phase circuit.
3. To understand concepts of elements and parameters in three phase AC circuits and Three phase Induction motor and Transformer.
4. To implement Electrical Protection and Safety devices and importance Energy Efficient Systems.

Course Outcomes:

At the end of the course, students will be able to

1. To solve and design Electrical and Magnetic circuit.
2. To solve and design Single phase circuit.
3. To distribute three phase Electrical energy and use of Induction motor and Transformer.
4. To implement Electrical Protection and Safety devices and importance Energy Efficient Systems.

List of Experiments
1. General Introduction to Electrical Engineering laboratory.
2. Verification of Ohm's Laws.
3. Verification of Kirchhoff' Current Law.
4. Verification of Kirchhoff' Voltage Law.
5. Determination of Power factor in ac circuit.
6. Determination of Resistance & Inductance of a coil.
7. Study of Phasor Relationship in R-L-C series circuit.
8. Verification of phase and line parameters in three phase system.
9. Determination of Efficiency and Regulation of Single Phase Transformer.
10. Study of different types of Earthing.
11. Study of different types of Protective devices.
12. Study of different types of lamps.

Reference Books:

1. Elements of electrical Engineering by U.A. Bakshi
2. Electrical Technology by U.A. Bakshi
3. Basic Electrical Engineering by B. H. Deshmukh

4. A text book in electrical technology by B. L. Thareja.

5. Fundamentals of Electrical Engineering by Ashfaq Husain

6. Basic Electrical Engineering by Mehta V.K. & Mehta Rohit

7. Basic Electrical Engineering by J.B. Gupta

8. Basic Electrical Engineering by DP Kothari, I J Nagrath

Supplementary Readings:

https://nptel.ac.in

https://easyengineering.net/basic-electrical-engineering-by-bakshi-nw/

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester– I)
01TFP156: Functional English- I Lab

Teaching Scheme: Tutorial: 2 Hrs/Week	Credits 1	Evaluation Scheme: CIE: 50 Marks

Course Objectives:
   1. Understand the importance of listening, speaking, reading and writing skills which are beneficial to enhance communication skill.

   2. To acquaint the students with English phonology and make them practice correct Pronunciation.

   3. To make them aware about effective writing skills along with accurate grammar and vocabulary.

   4. To help them communicate effectively and to present their ideas confidently.

Course Outcomes:
   At the end of the course, students will be able to
   1. Apply the learnt knowledge of LSRW skills while communicating.

   2. Comprehend English Sounds, stress pattern and intonation.

   3. Compose formal letters, emails and job application with accurate grammar and vocabulary.
   4. To exhibit oratorical skills by giving oral presentations.

List of Experiments

1. SWOT Analysis --Understanding self

2. Communicative Grammar

3. Communicative vocabulary

4. Drafting Simple application letter and E mail writing

5. Writing Effective Resume

6. Common Errors in pronunciation (phonetics)

7. Interview techniques

8. Extempore

9. Formal presentation on given topic

10. Group Discussion

Reference Books:
   1. Communication skills for Engineers by Sunita Mishra & C. Muralikrishna (Pearson)
   2. Communication Techniques and Skills by R K Chaddha
   3. Body Language by Allen Pease.
   4. Speaking Effectively by Jeremy Comfort, Pamela Rogerson, Cambridge University Press

New Delhi

5. Soft Skills for Managers by Dr. T. KalyanaChakravarthi, Dr. T. LathaChakravarthi, Biztantra

6. Soft Skills for every one by Jeff Butterfield, Cengage

7.Professional communication skills by A.K. Jain,S.Chand

8. Developing Communication Skills by Krishna Mohan & Meera Banerji (Macmillan)

Supplementary Readings:

Language lab ---- softwares to enhance communication skill and pronunciation.

SCHEME OF ASSESSMENT: CIE

Submission – Completed Journal and assignments.

TUTORIALS	30 MARKS (Attendance, writing, performance)
ASSIGNMENTS	10 MARKS
ORAL	10 MARKS

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester– I)
01TFP157: Idea Lab

Teaching Scheme: Practical: 02 Hrs/Week	Credits 01	Evaluation Scheme: CIE: 50 Marks

Course Objectives:
1. Understand social innovation concepts and approaches.
2. Identify new and unaddressed social needs.
3. Develop self-awareness concerned to social problems.
4. Design innovative solutions with social impact through application of new models of leadership, team work and creativity techniques.

Course Outcomes:
At the end of the course, students will be able to
1. Identify the problems faced by the society.
2. Generate different ideas through creativity and brainstorming.
3. Apply problem solving techniques to derive best solution.
4. Design and develop innovative solution to the social problems.

List of Experiments
1. Visit to the social sites for identification of social needs and community problems.
2. Understanding of the need, description, problem definition, social and economic constraints for affordable and appropriate technology.
3. Sessions on creativity, innovation and new product development
4. Demonstration of modern manufacturing facilities available at the institute
5. Demonstration of automation and programming tools.
6. Personal implementation of social awareness concerned to community problems
7. Active sessions on brainstorming, idea generation and problem solving techniques
8. Mini project to develop solutions regarding social needs

Reference Books:

1. The Open Book of Social Innovation: Ways to Design, Develop and Grow Social Innovation, Paperback March, 2010 by Robin Murray, Julia Caulier-Grice, Geoff Mulgan
2. The Power of Social Innovation: How Civic Entrepreneurs Ignite Community Networks for Good, 1st Edition by Stephen Goldsmith, Michael R. Bloomberg, Gigi Georges, Tim Glynn Burke.
3. Social innovator series: ways to design, develop and grow social innovation, the open book of social innovation by robin murray julie caulier-grice geoff mulgan.
4. The International Handbook on Social Innovation: Collective Action, Social Learning

and Transdisciplinary Research Paperback by Frank Moulaert, Diana MacCallum.

5. Guide to Social Innovation by Johannes HAHN and Laszlo ANDOR7.

Supplementary Readings:

- https://epdf.tips/the-power-of-social-innovation-how-civic-entrepreneurs-ignite-communitynetworks.html
- http://www.idmais.org/desislab/wp-content/media/social.pdf

First Year B. Tech - Fashion Technology
Semester-II

Sr. No.	Course Code	Course Title	Course Category	Teaching scheme				Course Credits
				L	T	P	Contact Hrs./wk	
1	01TFL158	Spinning Technology	MDM	3			3	3
2	01TFL161	Mathematics & Statistics- II	BSC	3			3	3
3	01TFP162	Indian Traditional Textiles	IKS		2		2	2
4	01TFL163	Applied Physics	BSC	3			3	3
5	01TFL164	Design Thinking and Drafting	ESC	2			2	2
6	01TFL103	Basics of Apparel Technology	PCC	3			3	3
7	01TFP104	Basics of Apparel Technology Lab	PCC			2	2	1
8	01TFP159	Spinning Technology Lab	VSEC			2	2	1
9	01TFP160	Functional English - II Lab	AEC02			2	2	1
10	01TFP166	Design Thinking and Drafting Lab	AEC01			2	2	1
11	01TFP169	Basic Computer and Programming Lab	AEC01			2	2	1
12	01TFI170	Democracy, Election and Good Governance (Audit)	IKS	-	-	-	-	-
		Total		**14**	**2**	**10**	**26**	**21**

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester – II)
01TFL158: Spinning Technology

Teaching Scheme: Lectures: 03 Hrs/Week	Credits 03	Evaluation Scheme: SE 1: 25Marks SE 2: 25Marks SEE: 50Marks

Course Objectives:
1. To understand textile terms and basic spinning processes.
2. To understand yarn numbering systems and classification.
3. To understand the advanced yarn manufacturing systems.
4. To understand the fancy yarns, sewing and embroidery threads.

Course Outcomes:
   At the end of the course, students will be able to
1. Understand textile terms and basic spinning processes.
2. Understand yarn numbering systems and classification.
3. Understand the advanced yarn manufacturing systems.
4. Understand the fancy yarns, sewing and embroidery threads.

Course Contents		
Unit I	**Fundamentals of Textile**	**05 Hours**

Basic terms – Textile, Staple fibre, Spun/Filament yarn, Blending, Mixing. Concepts of drafting & doubling.
Yarn numbering systems: Introduction, Importance, Direct and Indirect yarn numbering systems. Calculations on different yarn numbering systems.

Unit II	**Introduction to Ring Spinning**	**08 Hours**

Ring spinning: Study of carded and combed yarn manufacturing processes. Introduction and objectives of Opening & Cleaning, Carding, Combing, Drawframe, Speedframe &Ringframe. **Blend spinning:** Objects of blend spinning, stages of fibre blending, Properties and applications of blended yarns. Yarn doubling, yarn conditioning.

Unit III	**Alternate yarn spinning techniques**	**08 Hours**

Introduction to Rotor spinning, Compact spinning, Air-jet spinning, Friction spinning, Self twist - Repco spinning, Wrap spinning, Twilo spinning, their properties and applications.

Unit IV	**Classification of Yarns**	**05 Hours**

Classification and study of yarns- carded & combed yarns, woolen & worsted yarns, filament & spun yarns, textured yarn and their properties and applications. Yarn linear density, yarn twist, strength & uniformity.

Unit V	**Fancy Yarns**	**05 Hours**

Introduction to Fancy, Hosiery, Elastane, Slub yarn, Multi twist, Multi count, Crep yarn, Blended Fancy (mélange) yarn, SIRO, Bobtex yarn, chenille yarn, their properties and applications.

Unit VI	Sewing and Embroidery Threads	07 Hours

Introduction and importance of Sewing Threads. Characteristics of Sewing Threads. Classification of sewing thread. Thread construction, types and production method of sewing threads. Types of thread package &Ticket number. Introduction of embroidery threads, types and applications, Characteristics of embroidery thread. Embroidery threads manufacturing methods and types of thread packages. Thread size.

Reference Books:

1. Cotton Ginning, Textile Progress, The Textile Institute Publication. Fundamentals of Spun Yarn Technology by Carl A Lawrence.
2. Blowroom, Carding, Drawframe by Prof. A.R. Khare.
3. Elements of Ring frame and doubling by A. R. Khare.
4. Essential Calculations of Practical Cotton Spinning by T.K. Pattabhiraman
5. Spun Yarn Technology by Eric Oxtoby.
6. Blend spinning by K. R. Salhotra
7. The Rieter Manual of Spinning, Volume 6, Alternative Spinning Systems, Dr. Herbert Stalder.
8. The Rieter Manual of Spinning, Volume 4, Ring Spinning, Werner Klein and Dr. Herbert Stalder.
9. Two for one Twister technology and Technique for spun yarns by H. S. Kulkarni and HVS Murty
10. Ring frame & doubling by Prof. A. R. Khare.
11. Fancy yarns –Their manufacture and application by R H Gong and R.M Wright, Thetextile institute -CRC- Wood head publishing limited.
12. Modern Yarns for Modern Fabrics Seminar' Conference proceedings. By TTI, TheTextile Inst. Publisher.
13. Yarns & Fabric Classification Main Items in wool and blends, Italtex Editor.
14. Textile guide synthesis to create yarns & fabrics, Italtex Editor
15. Sewing Threads' Textile progress vol.30 no.3/4, by J.O. Uk Ponmwan, The TextileInst. Publisher.8.

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester –II)
01TFL161: Mathematics and Statistics- II

Teaching Scheme: Lectures: 3 Hrs/Week	Credits 3	Evaluation Scheme: SE 1: 25 Marks SE 2: 25 Marks SEE: 50 Marks

Course Objectives:

1. Prepare students to understand mathematical rules used for tracing Cartesian and Polar curves. Also, to prepare them for curve fitting using method of least square.

2. Prepare students with the multiple integrals and its applications. Also, to prepare them with complex numbers, Hyperbolic functions.

3. Prepare students with statistical methods so that they can understand analysis of bivariate data, correlation and regression.

4. Prepare students to understand probability, random variable and probability distributions. Also, to solve textile engineering problems using probability distributions.

Course Outcomes:

At the end of the course, students will be able to

1. Rules of tracing Cartesian and Polar curves. Also, they are able for trace curves.

2. The theory multiple integrals and its applications. Also, they are able to use the theory of complex numbers to separate real and Imaginary Parts.

3. Concept of bivariate statistical data, Correlation analysis and Regression analysis with examples.

4. The concept of random variable with type and probability distribution of random variable with types. Also, they are able to solve textile problems using Binomial, Poisson and Normal probability distributions.

Course Contents		
Unit I	**Curve Tracing & Curve fitting**	**07 Hours**
Rules and examples of curve tracing in Cartesian and Polar Equations only, Fitting of curves: linear equation $y=a+bx$, quadratic equation $y=a+bx+cx^2$ using least square method		
Unit II	**Integral Calculus & Applications**	**08 Hours**
Reduction formulae of sine and cosine functions, Gamma function, Beta Function (NO EXAMPLES), Multiple integrals: Introduction, solution of multiple integral also solution using change of order & Change of variables method. Application of integrals for finding Area, Mass of lamina up to double integrals only.		
Unit III	**Complex Numbers**	**05 Hours**
Introduction of Complex numbers, De Moivre's theorem, Circular, Hyperbolic and Inverse hyperbolic functions, Separation into real & imaginary parts.		

Unit IV	Bivariate data	07 Hours

Correlation: Definition, types, coefficient of correlation, properties & interpretation. Rank correlation coefficient & computation and interpretation. Regression: Regression concept and types. Lines of regression X on Y & Y on X, regression coefficients with properties & computation.

Unit V	Probability distribution	07 Hours

Introduction of probability and its basic laws. Random variable: Definition, types. Introduction of probability distribution, types of probability distribution, pmf & pdf, expectation of random variable. MGF of random variable. Standard discrete probability distributions: Binomial probability distribution: Definition, properties, fitting & examples. Poisson probability distribution: Definition, properties, fitting & examples.

Unit VI	Standard continuous probability distributions	06 Hours

Normal probability distribution: Definition, properties, standard normal distribution & examples. Chi-square probability distribution ($\chi 2$): Definition & properties only. t-probability distribution: Definition & properties only. F- probability distribution: Definition & properties only. Introduction of statistical table for Z, t, $\chi 2$, & F

Reference Books:

1. A textbook of applied mathematics Vol.-I & II by P.N. & J.N. Wartikar
2. Higher engineering mathematics by B.S. Grewal
3. A textbook of applied mathematics by Bali, Saxena, Iyangar.
4. Mathematical Statistics by J.E. Fruend.
5. Probability & Statistics for engineers by Johnson.
6. Statistical methods by Kumbhojkar.

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester –II)
01TFP162: Indian Traditional Textiles

Teaching Scheme: Tutorial: 2 Hrs/Week	Credits 2	Evaluation Scheme: CIE: 50 Marks

Course Objectives:
1. Explain fibres, yarns, fabrics, processing methods and apparels used in historical India.
2. Explain the distinctiveness of Indian traditional textiles.
3. Explain the historical and cultural influences on Indian traditional textiles.
4. Explain importance of preserving and promoting Indian traditional textile techniques and their cultural heritage.

Course Outcomes:
At the end of the course, students will be able to
1. Describe the distinctiveness of Indian traditional textiles.
2. Analyse the historical and cultural influences on Indian traditional textiles.
3. Explain importance of preserving and promoting Indian traditional textile techniques and their cultural heritage.
4. Develop effective research and presentation skills through topics related to Indian traditional textiles.

Course Contents		
Unit I	**Indian Traditional Fibres**	**3 Hours**

Introduction to Indian traditional fibres. Plant fibres: cotton, jute, flax, hemp, etc., Animal fibres: wool, silk, camel hair, etc. Historical significance and cultural relevance of traditional fibres. Techniques and tools used for processing of traditional fibres. Properties and applications of traditional fibres.

Unit II	**Indian Traditional Yarns**	**3 Hours**

Traditional spinning techniques: Hand spinning, Charkha, Takli, Drop spindle, etc. Different types of traditional yarns: handspun cotton, silk and woolen yarn. Evolution of yarn-making techniques in India. Role of yarns in Indian textile traditions and crafts. Applications of traditional yarns.

Unit III	**Indian Traditional Fabrics**	**4 Hours**

Overview of Indian traditional fabrics. Handloom weaving techniques: Pit loom, Frame loom, Backstrap loom, etc. Region-wide variations in weaving styles and motifs. Muslin cloth. Historical and cultural significance of Indian traditional fabrics. Revival and preservation of traditional fabric techniques.

Unit IV	**Indian Traditional Dyeing and Printing**	**4 Hours**

Introduction to Indian traditional dyeing and printing techniques. Natural dyeing methods: Indigo, Madder, Turmeric, Lac, etc. Traditional block printing: Bagru, Sanganer, Kalamkari, Ajrakh, etc. Tie and dye techniques: Bandhani, Leheriya, Patola, etc. Preservation and modern adaptations of traditional dyeing and printing techniques.

Unit V	Indian Ancient Costumes	4 Hours

Male and female attire in Indus valley civilization, Vedic era, Maurya period, Kushan period, Chola period, Gupta period.

Unit VI	Costumes in Different Parts of India	6 Hours

Speciality fabrics of different parts of India: Maheshwari, Banarasi, Jamdani, Paithani, Kota, Gadwal, Venkatgiri, Gharchola, Kanjeeveram, Batik, Barabanki, Dhoti, Lungi, Kurta Pajama, Shervani, Ghagra, Lehenga, Choli, Pagri, etc.

Reference Books:

1. Jasleen Dhamija, Handwoven Fabrics of India, Abhinav Publications, 2004, ISBN: 978-8170174342.
2. Ritu Kumar, Costumes and Textiles of Royal India, Antique Collectors' Club, 2006, ISBN: 978-1851493174.
3. B.N. Goswamy, Indian Costumes in the Collection of the Calico Museum of Textiles, Mapin Publishing, 2009, ISBN: 978-1890206842.
4. K.R. Subanna, Indian Dyes and Dyeing Industry in the 18th and 19th Centuries, Manohar Publishers, 1999, ISBN: 978-8173042730.
5. Jasleen Dhamija, Asian Embroidery, Brijbasi Art Press, 2003, ISBN: 978-8188230062.
6. Rahul Jain, Indian Textiles: Past and Present, Aryan Books International, 2012, ISBN: 978-8173054085.
7. Rta Kapur Chishti, Saris: Tradition and Beyond, Roli Books, 2012, ISBN: 978-8174369213.
8. Martand Singh, Indian Embroideries, Roli Books, 2009, ISBN: 978-8174365055.
9. Usha Balakrishnan, Carpets and Floor Coverings of India, Roli Books, 2010, ISBN: 978-8174367707.
10. Manorama Bawa, Indian Cotton Textiles: Seven Centuries of Chintz from the Karun Thakar Collection, Prestel Publishing, 2013, ISBN: 978-3791352666.

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester -II)
01TFL163: Applied Physics

Teaching Scheme: Lectures: 3 Hrs/Week	Credits 3	Evaluation Scheme: SE 1: 25 Marks SE 2: 25 Marks SEE: 50 Marks

Course Objectives:

1. To Understand properties of matter such as surface tension, viscosity, elasticity and their applications.
2. To Understand the concepts of diffraction, polarization and their applications.
3. To Understand working principle of laser and photocell.
4. To Understand basic concepts related to crystallography.

Course Outcomes:

At the end of the course, students will be able to

1. Understand properties of matter such as surface tension, viscosity, elasticity etc. and their applications.
2. Comprehend the concepts of diffraction, polarization and their applications.
3. Apply the working principles of photocell, LASER and their applications in engineering.
4. Analyze crystal structure by x-ray diffraction.

Course Contents		
Unit I	**Elasticity**	**7 Hours**

Stress, strain, Hooke's Law of elasticity, breaking stress, Working stress, Factor of safety. Some peculiar traits and Factors affecting elasticity. Poisson's ratio, Young's modulus, bulk Modulus and Modulus of rigidity. Relation between Y, η and K, Twisting couple on a cylinder (for wire), Torsional rigidity.

Unit II	**Viscosity**	**6 Hours**

Newton's Law of viscosity, Streamline & Turbulent flow, Critical velocity,
Significance of Reynold's number, Stokes law, Terminal velocity and its expression.
Poiseuille's equation for flow of a liquid through a horizontal capillary tube.
Experimental determination of η for a liquid by Poiseuille's method, Working of
Ostwald's viscometer. Applications of viscosity.

Unit III	**Friction and Surface Tension**	**6 Hours**

Friction, Types of friction, Laws of friction, Coefficient of friction, Factors affecting frictional intensity, importance of friction in textile.
Molecular theory of surface tension. Surface energy, Angle of contact,
capillary action, Expression for rise of liquid in capillary-by-capillary rise method. Applications of surface tension. Excess pressure inside a liquid drop and soap bubble.

Unit IV	**Wave Optics**	**7 Hours**

Laws of refraction, refractive index, total internal reflection. Magnifying Power and Resolving power. Construction & working of electron microscope.

Polarization of light, Double refraction, Nicol prism, Quarter wave and Half wave plate. Production and analysis of circularly and elliptically polarized light.

Unit V	Photonics	7 Hours

Stimulated Absorption, Spontaneous emission, Stimulated emission. Characteristics of laser, Gas Laser (CO_2 laser), Applications of Laser in textile industry.

Photoelectric effect, Einstein's photoelectric equation. Factors affecting the photoelectric effect. Photoelectric sensors, Use of photoelectric sensors in textile industry.

Unit VI	Crystallography	6 Hours

Production of x-rays by modern Coolidge tube, Properties and Applications of X-rays, X-ray spectrum.

Introduction to crystallography, Miller indices of crystallographic planes, interplanar spacing, x-ray diffraction, Bragg's law, determination of crystal structure by Bragg's x-ray spectrometer.

Reference Books:

1. Elements of Properties of Matter by D.S. Mathur
2. Engineering Physics by B.L. Theraja
3. Engineering Physics by R.K. Gour& Gupta
4. Physics for Engineers by M.R. Srinivasan
5. Text Book of Optics by Brijlal & Subramanyam
6. Optics by A.K. Ghatak

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. Textile Plant Engineering (Semester – II)
01TFL164: Design Thinking and Drafting

Teaching Scheme: Lectures: 02 Hrs/Week	Credits 02	Evaluation Scheme: SE 1: 25 Marks SE 2: 25 Marks SEE: 50 Marks

Course Objectives:
1. To introduce procedure for converting an idea into design.
2. To convert 2-dimensional views in to 3-dimensional view.
3. To convert 3-dimensional view from given 2-dimensional views.
4. To understand procedure for drawing development of solids such as cone, cylinder, prism and pyramid.

Course Outcomes:
At the end of the course, students will be able to
1. Generate ideas through design thinking.
2. Draw 2-dimensional views from the given pictorial 3-dimensional view.
3. Draw 3-dimensional view from given 2-dimensional views.
4. Draw Development of lateral surfaces of solids such as cone, cylinder, prism & pyramid.

Course Contents		
Unit I	**Introduction to Design Thinking**	**02 Hours**
Principles of design thinking, stages of design thinking, benefits of design thinking, team-based design thinking, tools of design thinking.		
Unit II	**Applications of Design Thinking**	**02 Hours**
Design thinking for Business Process Modeling, Prototyping, Strategic Innovation, Importance of Design Thinking Workshop.		
Unit III	**Introduction to Drafting**	**05 Hours**
Lines, Letterings, and dimensioning. Introduction to Projection of Points, Lines, Planes, Solids and Section of Solids inclined to both planes H.P. and V.P.		
Unit IV	**Orthographic Projections and Sectional Orthographic views**	**06 Hours**
General principles, First angle method, Third angle method, Cutting plane, Types of sections, drawing orthographic views (Elevation, Plan and End view) and sectional views of machine components.		
Unit V	**Isometric Projections**	**04 Hours**
Principle, Isometric scale, Isometric views, Making Isometric drawings of simple objects from orthographic views.		

Unit VI	Development of Surfaces	07 Hours
Introduction to solids (Types of solids only), Development of lateral surfaces of cubes, prisms, pyramids, cylinders & cones.		

Reference Books:
1. Product Design and Development- Karl Ulrich, Steven Eppinger, Anita Goyal. 2. Engineering Design – George Dieter. 3. Engineering Drawing by N. D. Bhatt & V. M. Panchal. 4. Engineering Drawing by Venugopal. 5. Machine Drawing by N. D. Bhatt & V. M. Panchal. 6. Machine Drawing by K. L. Narayana, Kannaiah P., K. Venkata Reddy.

Supplementary Readings:

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester – II)
01TFL103: Basics of Apparel Technology

Teaching Scheme: Lectures: 03 Hrs/Week	Credits 03	Evaluation Scheme: SE 1: 25 Marks SE 2: 25 Marks SEE: 50 Marks

Course Objectives:
1. To explain the structure and classification of the apparel industry
2. To describe various preproduction processes in the apparel industry
3. To describe various post-production processes in the apparel industry
4. To explain the production technology and warehousing for the garment industry.

Course Outcomes:
At the end of the course, students will be able to
1. Describe the structure and classification of apparel industries as per size, labour and product etc.
2. Illustrate various pre-production processes with its importance, process flow, requirements and types of machinery.
3. Illustrate various Post-production processes with its importance, process flow, requirements and types of machinery.
4. Categorize the different types of Production technologies and the importance of warehousing

Course Contents		
Unit I	**Introduction to the Apparel industry**	**06 Hours**
Introduction, organization structure, process flow, roles and responsibilities of various departments of apparel industry. Pre-production activities, production activities and post-production activities. Process flow of different departments.		
Unit II	**Classifications of Garment, Trims & Accessories**	**05 Hours**
Classifications of Garments - Men's, women's, children's and unisex. Animal wear. Parts of garments. Different types of trims, accessories and their applications.		
Unit III	**Spreading & Cutting**	**10 Hours**
Spreading - Types of spreads, Method of spreading, fabric packages. Cutting: Preparation for cutting, Methods of cutting, Different types of cutting machines and their applications, Preparation for sewing. Fusing: Purpose of fusing, Process of fusing, types of fusing and requirement of fusing as per fabric, fusing machinery and equipment's, methods of fusing.		
Unit IV	**Sewing & Finishing**	**08 Hours**
Sewing: Sewing machine parts and functions, Types of sewing machine, Beds, Elements of feeding mechanism, Types of feed mechanism. Machinery required for different products. Pressing: Purpose, classification, Basic components, Types of pressing equipment's and machinery. Garment finishing: Stages and types in finishing, Warehousing: Handling equipment, storage equipment, packing equipment.		

Unit V	Seams & stitches	05 Hours

Classification of stitches & seams their application, sewing threads classification, properties, types and sizes, sewing machine needles types and sizes, their application in different apparels.

Unit VI	Garment Production System	05 Hours

Make through system, section system, progressive bundle system, unit production system & modular system. Evaluation of garment production system. Flow process grid and chart.

Reference Books:

1. Apparel manufacturing technology by T. Karthik, P. Ganesan, D. Gopalakrishnan. CRC Press Taylor & Francis Group, USA ISBN 9781498763752
2. Garment Technology for fashion designers by Cooklin Gerry, Black well science Ltd, 1997, England, ISBN No. 978-1-4051-9974-2. 208
3. The Technology of clothing manufactures, by Carr & Latham, Blackwell Publications.
4. Introduction to clothing manufacturing by Gerry Cooklin.
5. Garment manufacturing Technology, Rajkishore Nayak Rajiv Padhye, Woodhead publishing
6. Apparel Machinery and Equipments, By R. Rathinamoorthy and R. Surjit, Woodhead Publishing India in Textiles.
7. Apparel Handbook by Jacob sollinger
8. Clothing construction and wardrobe planning by Dora S. Lewin, Mabel Goode Bowers, Manetta Knttunen- The Macmillan Co New York

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester – II)
01TFP104: Basics of Apparel Technology Lab

Teaching Scheme: Practical: 02 Hrs/Week	Credits 01	Evaluation Scheme: CIE: 50 Marks

Course Objectives:
5. To explain the various apparels, trims & accessories.
6. To describe various types of sewing machine & its adjustment.
7. To describe various types sewing needles & threads.
8. To explain various types of seams & stiches.

Course Outcomes:
At the end of the course, students will be able to
1. Explain the various apparels, trims & accessories.
2. Describe various types of sewing machine & its adjustment.
3. Describe various types sewing needles & threads.
4. Explain various types of seams & stiches.

List of Experiments
1.   Study different types of apparels and their classification.
2.   Study different types trims & accessories.
3.   Study different parts of sewing machine their function.
4.   Study the fitting of bobbin, bobbin case and shuttle.
5.   Study of sewing needles, sizes, and its adjustment on machine.
6.   Study the sewing threads- Types, size, twist, ply, substrate, and its manufacturing.
7.   Study different types of sewing machines and SPI calculation.
8.   Study different types of sewing machine beds and work aids.
9.   Study the different types of seams used in apparels.
10. Study the different types of stiches used in apparels.
11. Study the ergonomically aspects for sewing machine
12. Industrial visit to garment factory.

Reference Books:

1. Apparel manufacturing technology by T. Karthik, P. Ganesan, D. Gopalakrishnan. CRC Press Taylor & Francis Group, USA ISBN 9781498763752
2. Garment Technology for fashion designers by Cooklin Gerry, Black well science Ltd, 1997, England, ISBN No. 978-1-4051-9974-2. 208
3. The Technology of clothing manufactures, by Carr & Latham, Blackwell Publications.
4. Introduction to clothing manufacturing by Gerry Cooklin.

5. Garment manufacturing Technology, Rajkishore Nayak Rajiv Padhye, Woodhead publishing
6. Apparel Machinery and Equipments, By R. Rathinamoorthy and R. Surjit, Woodhead Publishing India in Textiles.
7. Apparel Handbook by Jacob sollinger
8. Clothing construction and wardrobe planning by Dora S. Lewin, Mabel Goode Bowers, Manetta Knttunen- The Macmillan Co New York

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester – II)
01TFP159: Spinning Technology Lab

Teaching Scheme: Practical: 02 Hrs/Week	Credits 01	Evaluation Scheme: CIE: 50 Marks

Course Objectives:
1. To identify various spun, filament and fancy yarns.
2. To understand spun yarn manufacturing systems.
3. To understand alternate yarn manufacturing systems.
4. To understand filament manufacturing system.

Course Outcomes:
At the end of the course, students will be able to
1. Identify various spun, filament and fancy yarns.
2. Understand spun yarn manufacturing systems.
3. Understand alternate yarn manufacturing systems.
4. Understand filament manufacturing system.

List of Experiments

1. Process flow of carded and combed yarn manufacturing processes.
2. Study of Blow-room line.
3. Study of material flow in carding machine.
4. Study of material flow in drawframe machine.
5. Study of material flow in comber preparatory & comber machines.
6. Study of material flow in speed frame & ring frame.
7. Study of material flow in Rotor spinning.
8. Study of construction and working of Two for one twister.
9. Study of material passage in Air-jet texturizing.
10. Study of material passage in Melt/Dry/Wet spinning.
11. Visual identification and collection of various yarns.
12. Mill visit – spinning mill.

Reference Books:

1. Cotton Ginning, Textile Progress, The Textile Institute Publication. Fundamentals of Spun Yarn Technology by Carl A Lawrence.
2. Blowroom, Carding, Drawframe by Prof. A.R. Khare.
3. Elements of Ring frame and doubling by A. R. Khare.

4. Essential Calculations of Practical Cotton Spinning by T.K. Pattabhiraman
5. Spun Yarn Technology by Eric Oxtoby.
6. Blend spinning by K. R. Salhotra
7. The Rieter Manual of Spinning, Volume 6, Alternative Spinning Systems, Dr. Herbert Stalder.
8. The Rieter Manual of Spinning, Volume 4, Ring Spinning, Werner Klein and Dr. Herbert Stalder.
9. Two for one Twister technology and Technique for spun yarns by H. S. Kulkarni and HVS Murty
10. Ring frame & doubling by Prof. A. R. Khare.
11. Fancy yarns –Their manufacture and application by R H Gong and R.M Wright, Thetextile institute -CRC- Wood head publishing limited.
12. Modern Yarns for Modern Fabrics Seminar' Conference proceedings. By TTI, TheTextile Inst. Publisher.
13. Yarns & Fabric Classification Main Items in wool and blends, Italtex Editor.
14. Textile guide synthesis to create yarns & fabrics, Italtex Editor
Sewing Threads' Textile progress vol.30 no.3/4, by J.O. Uk Ponmwan, The TextileInst. Publisher.8.

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester –II)
01TFP160: Functional English- II Lab

Teaching Scheme: Practical: 2 Hrs/Week	Credits 1	Evaluation Scheme: CIE: 50 Marks

Course Objectives:

  1. Understand the importance of listening, speaking, reading and writing skills which are beneficial to enhance communication skill.

  2. To enhance creativity in positive way.

  3. To make them aware about effective writing skills along with accurate grammar and vocabulary.

  4. To help them communicate effectively and to present their ideas confidently.

Course Outcomes:

  At the end of the course, students will be able to

  1. Apply the learnt knowledge of LSRW skills while communicating.

  2. Think in positive and creative way while presenting their ideas.

  3. Formulate grammatically correct sentences and use relevant words as per contexts with accurate   vocabulary.

  4. To exhibit oratorical skills by giving oral presentations.

List of Experiments

1. Effective listening

2. Effective Reading

3. Paragraph writing

4. Creative writing

5. Autobiography

6. Book Review

7. Preparing Formal speech (Importance of verbal and Nonverbal communication)

8. Debate

9. Elocution

10. Situational conversation

Reference Books:

  1. Communication skills for Engineers by Sunita Mishra & C. Muralikrishna (Pearson).

  2. Communication Techniques and Skills by R K Chaddha

  3. Body Language by Allen Pease.

  4. Speaking Effectively by Jeremy Comfort, Pamela Rogerson, Cambridge University Press

New Delhi

5. Soft Skills for Managers by Dr. T. KalyanaChakravarthi, Dr. T. LathaChakravarthi, Biztantra

6. Soft Skills for every one by Jeff Butterfield, Cengage

7.Professional communication skills by A.K. Jain,S.Chand

8. Developing Communication Skills by Krishna Mohan & Meera Banerji (Macmillan)

Supplementary Readings:

Language lab ---- softwares to enhance communication skill and pronunciation.

SCHEME OF ASSESSMENT: CIE

Submission – Completed Journal and assignments.

TUTORIALS	30 MARKS (Attendance, writing, performance)
ASSIGNMENTS	10 MARKS
ORAL	10 MARKS

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. Fashion Technology (Semester – II)
01TFP166: Design Thinking and Drafting Lab

Teaching Scheme: Practical: 02 Hrs/Week	Credits 01	Evaluation Scheme: CIE: 50 Marks

Course Objectives:
1. To introduce procedure for converting an idea into design.
2. To convert 2-dimensional views in to 3-dimensional view.
3. To convert 3-dimensional view from given 2-dimensional views.
4. To understand procedure for drawing development of solids such as cone, cylinder, prism and pyramid.

Course Outcomes:

At the end of the course, students will be able to
1. Generate ideas through design thinking.
2. Draw 2-dimensional views from the given pictorial 3-dimensional view.
3. Draw 3-dimensional view from given 2-dimensional views.
4. Draw Development of lateral surfaces of solids such as cone, cylinder, prism & pyramid.

List of Experiments/ Practical's

1. PPT presentation/Assignments on Design Thinking.

2. PPT presentation/Assignments on Applications of Design Thinking.

3. PPT presentation/Assignments on Case study on design thinking/ redesign/modular design/design for manufacturing and assembly.

4. Lines, Letterings & Dimensioning.

5. Projection of Lines, Auxiliary Plane Method.

6. Projection of Planes, Auxiliary Plane Method.

7. Projection of Solids, Auxiliary Plane Method.

8. Projection of Section of Solids, Auxiliary Plane Method.

9. Conversion of pictorial view into orthographic views.

10. Conversion of pictorial view into sectional orthographic views.

11. Isometric Projections.

12. Development and antidevelopment of lateral Surfaces of solids.

Reference Books:
2. Product Design and Development- Karl Ulrich, Steven Eppinger, Anita Goyal.
2. Engineering Design – George Dieter.
3. Engineering Drawing by N. D. Bhatt & V. M. Panchal.
4. Engineering Drawing by Venugopal.
5. Machine Drawing by N. D. Bhatt & V. M. Panchal.
6. Machine Drawing by K. L. Narayana, Kannaiah P., K. Venkata Reddy.

Supplementary Readings:

DKTES Textile and Engineering Institute, Ichalkaranji
First Year B. Tech. (Fashion Technology) (Semester– II)
01TFP169: Basic Computer and Programming Lab

Teaching Scheme: Practical: 2 Hrs/Week	Credits 1	Evaluation Scheme: CIE: 50 Marks

Course Objectives:
1. To describe basic Computer architecture and generation of computer.
2. To explain advanced features of MS Office application
3. To illustrate scripting language and programming
4. To explain basic structure of 'C' programming formation and implementation

Course Outcomes:
At the end of the course, students will be able to
1. Understand basic of computer architecture and generation of computer.
2. Creating professional-quality documents using   MS Office.
3. Design and implement web pages using scripting language.
4. Understand programming concept and develop simple application programs in 'C' programming language.

List of Experiments
1. Create a document in MS Word to study different ribbon tag.
2. Create spreadsheet application to manipulate numbers, formula, analysis and graphs in MS Office
3. Create a Power Point presentation application using Text, Image, Animation using MS Office
4. Study of basic formulation tag of HTML
5. Create a simple web page using List, Image, Hyperlink and Frame in HTML
6. Create a simple personal web page using HTML
7. Program for Addition, Subtraction, Multiplication, Division of two numbers using 'C' Language
8. Program for decision making statement –Nested if- Else and switch statement in 'C' Language
9. Program for different types of loops using 'C' Language
10. Program for one-dimensional array using 'C' Language
11. Program for two-dimensional array using 'C' Language 12. Program for graphics design using 'C' Language

Reference Books:
1. Fundamentals of Computers by V. Rajaram, PHI Publications.
2. HTML for beginners by Firuza Aibara
3. Let us C by Y.P. Kanetkar, BPB Publication
4. https://support.microsoft.com/en-us/training.

Supplementary Readings:
web links, journal articles, conference proceedings book chapters etc.

DKTES Textile and Engineering Institute, Ichalkaranji First Year B. Tech. (Textile Plant Engineering) (Semester- II) 01TFI170: Democracy, Election and Good Governance (Audit)		
	Evaluation Scheme: CIE: 50 Marks	

Course Objectives:

1. By studying on their own, students will try to understand importance of democracy, election to local self-government bodies and good governance.

Course Outcomes:

At the end of the course, students will be able to

1. Answer questions related to democracy, election to local self-government bodies and good governance.

Course Contents		
Unit I	**Democracy in India**	
• Dimensions of Democracy: Social, Economic and Political • Decentralization: Grassroots Level Democracy • Challenges before Democracy: women and marginalized sections of the society		
Unit II	**Election to Local Self Government Bodies**	
• 73rd and 74th Constitutional Amendment Acts: Institutions at the local level and Role of State Election commission • Local Body Elections: Urban & Rural • Duties of an Individual towards electoral process		
Unit III	**Good Governance**	
• Meaning and concept • Government and Governance • Good Governance initiatives in India		

* Students have to pass this subject by studying on their own & by securing minimum 20 marks out of 50, passing of this course is compulsory.