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Name of Program M.TECH (Textile Engineering)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
MTMA101	ODS	ADVANCED MATHEMATICS	60	20	20	0	0	3	1	0	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objective (CEOs):

To introduce the students with the Fundamentals of the Advanced Mathematics.

Course Outcomes (Cos):

After the successful completion of this course students are expected to be able to demonstrate the following knowledge skill and attitudes

The student will be able to

1. Apply the principles of the Modern Linear algebra.
2. Understand and find solution/numerical solution of the PDE.
3. Know the fundamental principles of the probability distributions.
4. Study the Random or Stochastic processes.
5. Solve the problems of the Fuzzy Set.

Syllabus

Unit – I

Linear Algebra: Vector space, Sub space, Basis & dimensions, Change of Basis, Linear Transformations, Matrix representation of the linear transformations.

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Unit – II

Partial Differential Equations & Fourier Transform: Solution of PDE by separation of variable method, Numerical solution of PDE using finite difference method, Elementary properties of FT, DFT

Unit – III

Probability Distributions: Discrete Random variable, Binomial and Poisson distributions, Continuous Random variable, Normal distribution, Concept of Sampling distribution and Theory of hypothesis.

Unit – IV

Random or Stochastic processes: Random or Stochastic processes and classifications, Markov Processes, Markov chain, Queuing theory: M/M/1: ∞/FCFS, M/M/1: k/FCFS, M/M/N: ∞/FCFS.

Unit – V

Fuzzy Set: Fuzzy set, Fuzzy relation, Fuzzy arithmetic, Fuzzy logic

Reference Books:

1. Higher Engg. Mathematics: B. S. Grewal, Khanna Publishers, Delhi
2. Higher Engg. Mathematics: E. Kreyzig, John Wiley & Sons (Asia) Pvt. Ltd.
3. Probability, Random variables & Random processes: Schaum's outlines.
4. Linear Algebra: Schaum's outlines.
5. Stochastic processes: J. Medhi, New age international publishers.
6. Calculus of finite differences and Numerica Analysis: Gupta and Malik
7. Fourier Transform: J. N. Sheddon
8. Fuzzy logic in Engineering: T. J. Ross Fuzz

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Name of Program M.TECH (Textile Engineering)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
MTTX101	DCS	THEORY OF YARN MANUFACTURING	60	20	20	0	0	3	1	0	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objective (CEOs):

The students will be able to gain knowledge of theories involved in the various manufacturing process of the yarn and to provide the basic knowledge on the various generation of faults/defects in the product and its remedies effectively.

Course Outcomes (Cos):

After the successful completion of this course students are expected to be able to demonstrate the following knowledge skill and attitudes

Students will be able to:

1. Identify and Analyze the problems in the processing of fibres .
2. Apply knowledge for designing of spinning machines.
3. Understand the fundamentals of blending and mixing.
4. Solve the complex problems occurring at the time of manufacturing process.

Syllabus
UNIT I

Cotton fibre selection through bale management. Forces on fibres during opening and cleaning processes and its effect. Carding process, Multi licker-in opening and factors influencing the transfer ratio, Analysis of cylinder load and transfer efficiency. Technological considerations in the design of high production card. Card wire geometry.

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UNIT II

Fibre configuration in card and drawn sliver. Hook removal and its significance. Sliver irregularity. Fibre movement in drafting field. Suppression of drafting wave. Drafting force. Roller slip. Roller eccentricity and vibration. Fibre fractionation in comber. Combing performance. Principles of autolevelling. Agronomy in Textile Machineries.

UNIT III

Blending of fibres, evaluation of blending efficiency. Analysis of forces on yarn and traveller. Spinning tension in ring and rotor spinning. Spinning geometry, Twist flow in ring and rotor spinning. End breaks during spinning. False twisting and friction spinning principles.

Unit IV

Spinning of micro denier fibre. Synthetic fibre spinning on cotton spinning system. Influence of high draft on yarn quality. Optimization of production speeds. Energy conservation and saving through process optimization. Yarn conditioning. Selection criteria for aprons, cots and top rollers. Control systems in spinning machinery.

UNIT V

Types of yarn. Twisting forms and yarn contraction. Influence of fibre characteristics on yarn structure. Tensile behaviour of filament, spun, core spun and elastic yarns. Production and properties of textured yarn with emphasis on false twist and air-jet textured yarns. Analysis of structure-property relationship of rotor, air-jet and friction spun yarns.

References:

1. Grosberg P and Iype C, “Yarn Production-Theoretical Aspects”, 1st Ed., The Textile Institute,UK, 1999.
2. Chattopadhyay R, “Advances in Technology of Yarn Production”, 1st Ed., NCUTE, New Delhi,2002.
3. Rao M V S and Talele A B, “A Guide to Crimping / Texturing Technology”, 1st Ed., Nasnal Printers and its associates, Surat, 1992.
4. Klein W, “Manual of Textile Technology- New spinning Systems”, Vol.5, 1st Ed., The Textile Institute, UK, 1993.

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SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
MTTX102	DCS	THEORY OF FABRIC MANUFACTURING	60	20	20	0	0	3	1	0	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objective (CEOs):

The students will be able to gain knowledge of theories involved in the various manufacturing process of the fabric and understand the various generation of faults/defects in the woven fabric and its remedies.

Course Outcomes (Cos):

Students will be able to:

1. Identify and Analyze the problems in the manufacturing of woven fabrics .
2. Apply knowledge for designing of weaving and preparatory machines.
3. Understand the fundamentals of yarn/fabric faults.
4. Solve the complex problems occurring at the time of fabric manufacturing process.

Syllabus

UNIT I

Yarn quality requirements - weaving and winding - yarn faults, quality of splice/knot, knot factor and clearing efficiency, Optimum clearing of yarn; Classimate Faults, Wound yarn package requirements for different weft insertion system,

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UNIT II

Control of ends break in warping, warp beam quality requirements; quality control in size recipe, size pick-up control, quality requirements of sized beam. Waste control in winding, warping and sizing. Development trends in winding, warping and sizing machines for improving quality of preparation and cost reduction.

UNIT III

Loom development trends and objectives. Beat-up force and pick spacing. Kinematics of sley with reference to shuttle loom. Electronic control of different motions of loom. Loom shed productivity control, fabric defects and their causes and remedies,

UNIT IV

Theoretical analysis of weft insertion in shuttleless loom. Fabric quality on Sulzer Projectile loom, Rapier looms, Air jet and Water jet looms. Air quality with respect to air jet loom, different propulsion aid used in air jet loom, flying stability of weft inserted by water jet loom, Different types of selvedges used in shuttleless weaving machines; Techno-economics of different shuttleless looms.

UNIT V

Multiphase loom, types – warp way and weft way multiphase loom, limitations and advantages of multiphase loom, rotatory beat up mechanism, Introduction to circular weaving; Weft velocity curves and comparison of different weft insertion system.

References:

1. Shuttleless Weaving - Dr. M. K. Talukdar
2. Principle of Weaving - Marks & Robinson
3. Textile Science & Technology Shuttleless Weaving Machines Oldrich, Talavasek & Vladimir Svaty
4. Modern Preparation and Weaving Machinery - A. Ormerod.
5. Hndbook of Weaving, Sabit Adanur, Ph. D.
6. Weaving Technology & Operation - A. Ormerod & Walter S. Sondhelm
7. Rapier Loom - WIRA
8. Filament Weaving NCUTE HRD Programme Coordinator Prof. P.A.Khatwani, Mr. S. S. Yardi,
9. Innovations in Weaving Machinery - (The Course of Loom Development) - Dr. Teruo Ishila
10. Modern Weaving Theory & Practice- R. B. Singh

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Name of Program M.TECH (Textile Engineering)
MTTX 103 (Elctive-1)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
MTTX113	DCS	STRUCTURE AND PROPERTIES OF FIBRES	60	20	20	0	0	3	1	0	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objective (CEOs):

The students will be able to gain knowledge on structural properties of fibres and also to explain the mechanical , electrical and thermal behaviour of fibre and its measurement correctly.

Course Outcomes (Cos):

Students will be able to:
1. Understand and Analyze basic structure of fibres.
2. Apply knowledge and analyze to solve the complex behaviour of fibre.
3. Understand the Dielectric and frictional fundamentals of fibres.
4. Illustrate basic knowledge about the structural behaviour of fibre.
5. Remember the working Principles of various measuring instruments.

Syllabus

UNIT I

Study of fibre structure by X-rays, IR Spectroscopy, optical and electron microscopy (SEM). Determination of degree of crystallinity, orientation, crystal size and morphology. Structure of fibres, morphology and order in fibre structure. Theories of fine structures of fibres.

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UNIT II

The Mechanical properties of fibres. Theories of elasticity. Visco elastic properties of fibres, various models like Maxwell, Irings etc, Thermodynamics analysis of deformation. Stress relaxation, creep, stress-strain relations, Temperature of visco-elasticity as applied to natural fibres. The Boltzman supervision principle and Nutting's Power Law, their application to fibres.

UNIT III

Sorption isotherms, heat of sorption, swelling and theories of moisture sorption. Hydrophilic and hydrophobic properties. Thermal Properties: Thermal expansion, Thermal conductivity;

UNIT IV

Di-electric properties. Effects of frequency and temperature on dielectric constant and static electricity. Electrical resistance and its measurement, Static electricity and measurement of static charge in fibres.

UNIT V

Frictional properties – Theory of friction and lubrication and its application to fibres. Measurement of friction. Optical properties: Polarizability and refractive index. Birefringence and its measurement;

References:

1. Vaidya; Production of Synthetic Fibres.
2. Shennai VA; Technology of Textile Processing – Vol.I, Textile Fibres.
3. Gupta, Kothari; Progress in TST Vol.II Textile Fibres Developments & Innovations
4. Murthy HVS; Introduction to Textile Fibre
5. Moncrieff Man Made Fibres.
6. Akira Nakamura; Fibre Science & Technology (Translated from Japanese).
7. Mishra SP; A Text Book of Fiber Science & Technology.
8. Tatsuya Hongu, Glyn O. Philips; New Fibers 2nd Edition.

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MTTX 103 (Elctive-1)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
MTTX123	DCS	APPAREL ENGINEERING AND QUALITY CONTROL	60	20	20	0	0	3	1	0	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objective (CEOs):

The students will be expose to the basic knowledge of the mechanism of sewing, quality parameters required for fabric and garment as per the customer requirement.

Course Outcomes (Cos):

Students will be able to:

1. Stitch the garment choosing the correct stitch and stitching machine
2. Assess the right quality of the fabric required as per the application.
3. Analyze and find the stitching defects produce during the stitching operation and provide the remedial solutions for the same
4. Select the correct thread, trim and accessories required in the garment

Syllabus

UNIT I

Mechanics of sewing operation: Feeding mechanism, mechanism of generation of needle thread tension, feed dog setting mechanism, stresses and heat generated during sewing, interaction of feed and pressure, sewing dynamics. Measurement and controls in sewing

operation: Pressure, sewing speed, thread tension, needle temperature, needle penetration force. Automation in sewing operation.

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UNIT II

Fabric quality assessment for clothing industry: Fabric quality requirement for high quality garments, low stress fabric mechanical properties and their effect on sewing operation. Use of FAST and KES system. Fabric mechanical properties and sewing operation interaction: Tailor ability and formability. Lindberg theory, optimization of sewing parameters by using fabric mechanical property, optimization of finishing parameters such as steam, pressure, vacuum, for getting desired effect.

UNIT III

Fabric defect analysis for clothing industry: Defect identification, bow and skewness, correlating defect with back process, value loss. Quality control in apparel manufacturing: Determination of sewability, seam pucker, seam slippage and needle cutting index, evaluation of cutting defect, fusing defect, sewing defect, inspection of dimension, appearance, drape, change in color, shape and spots.

UNIT IV

Measurement and selection of sewing thread properties for different fabrics: Optimization of sewing parameters such as ticket number, needle number, yarn tension, stitch density and stitch type for desired sewability.

UNIT V

Selection of lining and interlining fabrics for various shell fabric: Evaluation of lining and interlining fabric, determination of compatibility. Packaging of finished garment, final random inspection of finished garments, packaging method, safety norms. Accessories: Buttons, hook and eye, jips, velcro.

References:

1. Garment Technology for fashion Design – Gerry Cooklin
2. Introduction to clothing manufacture –Gerry Cooklin.
3. Technology of Clothing manufacture-Carr.
4. Technical Textiles, Shaleco E, Bradlock and Marce O'Hall cony
5. Introduction to clothing production management – Chuter A.J
6. Managing Quality in the Apparel Industry – Pradip V. Mehta, S. K. Bharadwaj
7. Progress in Textiles Science and Technology Vol.I Testing and QM; V. K. Kothari

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Name of Program M.TECH (Textile Engineering)
MTTX 103 (Elctive-1)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
MTTX133	DCS	WOOL TECHNOLOGY	60	20	20	0	0	3	1	0	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objective (CEOs):

The course will introduce the students with the knowledge of processing wool fibres and worsted manufacturing process to the extent of understanding the difference of normal manufacturing process and woolen process.

Course Outcomes (Cos):

Students will be able to:

1. Graduates will be able to choose suitable raw wool with necessary properties for the manufacturing of desired quality of woolen/worsted yarn or fabric.
2. Graduates will be able to demonstrate their skills in maufacturing of different types of recycled, wollen, semi-worsted and worsted yarn of desired quality standards from a given variety of fibres.
3. Graduates will be able to design various types of woolen/worsted fabrics of required quality characteristics by manipulating constituting yarn properties and fabric constructions.
4. Graduates will be able to select suitable dyes, chemicals and auxiliaries and also perform different chemical processes of wool in fibre, yarn or fabric form.
5. Graduated will be able to demostrate their skills in carrying out different mechanical and chemcial finishing of woolen/worsted fabrics.

Syllabus
UNIT I

Wool fibre and its properties: Morphological structure, components of fibre, fibre diameter, fibre contour, crimp, length, luster, specific gravity and refractive index, moisture relations, wet ability, fibre mechanical properties, gross composition of raw wool, molecular structures.

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UNIT II

Blending of wool with manmade fibres: Purpose of blending, effect of blend composition on performance of fabrics. **Woolen or carded Yarns**: Preliminary processes, blending or mixing, oiling of the stock, woolen carding, woolen spinning, yarn number and wool grade.

UNIT III

Worsted top making and spinning of worsted yarn: Worsted carding, backwashing, oiling, gilling or preparing, worsted combing, tow-to-top conversion systems, worsted drawing, worsted yarn spinning, norms and modern developments.

UNT IV

Manufacture of woolen fabrics: Woven Fabrics produced by projectile and rapier weaving machines, knitted and nonwoven woolen fabrics, use of FAST in worsted garment manufacturing.

UNT V

Chemical Processing: Objects and different methods of carbonizing of wool batch and continuous methods of scouring fibre, yarn and fabric; peroxide and per-acetic acid bleach of wool; production of anti-shrink wool, basic principle of treatment and parameters; dyeing, printing and finishing, testing and quality control of woollen processing. Wool Dyeing: Chemistry of dyeing wool and blend with acid, mordant, metal-complex and reactive dyes, Top and tip dyeing of wool. Wool Finishing: Scooping, damping, decatising and paper pressing of wool, Testing and Quality Control.

References:

1. Blended Textiles, Textile Association (India), 1981.
2. Lepenkov Y, “Wool Spinning”, Vol. 1and 2, 1st Ed. Mir Publisher, Moscow, 1983.
3. Bergen W V, “Wool Handbook,” vol.1 and 2, 3rd Ed., Interscience publisher, London.
4. Teasdale D C, “The Wool Handbook”, 4th Ed., 1996.
5. Trotman E R, “Dyeing and Chemical Technology of Textile Fibres”, Charles Griffin and Co. Ltd., London, 1975

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Name of Program M.TECH (Textile Engineering)
MTTX 104 (Elective-2)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
MTTX114	DCS	ADVANCE FABRIC STRUCTURE AND DESIGN	60	20	20	0	0	3	1	0	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objective (CEOs):

The student will be able to
understand and design compound fabric structures (like Double cloth, backed cloth, velvet str uctures, terry pile structures and leno structures) and jacquard designs as per specifications. They should be able to identify and differentiate simple and compound fabric structure accurately

Course Outcomes (Cos):

Students will be able to:

1. Make and develop new woven fabric design
2. Make Double cloth, backed cloth and velvet structures.
3. Solve technical problems related to compound fabric structures on the loom.
4. Provide suitable draft and pegplan for a given weave & utilise available resources for mak ing designs.

Syllabus
UNIT I

Absorbent Fabrics: Method of preparation, features and uses of Diamond and Diaper Weaves, Honey comb weaves, Huck-a-back and Mockleno weaves.

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UNIT II

Different types of yarn such as spun, filament, textured and fancy yarns and their impact on textile design. Concept of fabric designing through fabric structure

UNIT III

Jacquard designing, Figured pile fabric, design ,draft and peg plan. Double Cloth : Definition, features, classification and uses. Method of preparation of self stitched and centre stitched double cloths, their salient feature and uses. Wadded double cloth.

UNT IV

Stripe and Check Weaves : Features, criteria for selection of weaves for combination, rules governing the joining of different weaves. Method of preparation and uses.

Colour and Weave Effect : Weave and colour combinations, features, method of preparation of Continuous line effect, Hounds tooth, Birds eye, Crows foot, Hair lines and Step pattern.

UNT V

Calculations : Raw material calculations to produce different weaves. Technical specification of important fabrics.

References:

1 Nisbeth H, “Grammer of Textile Design”, 3rdedition, D B Tarapore Wala sons and Co., 1994.
2 Gokarneshan N, “Fabric Structure and Design”, New Age Inernational, New Delh
3 Grosicki Watsons ;Advance textile design.

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MTTX 104 (Elective-2)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL					
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*	Th	T	P	CREDITS
MTTX124	DCS	ADVANCE TEXTILE TESTING	60	20	20	0	0	3	1	0	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objective (CEOs):

Student will be able to understand the various advanced techniques available for textile testing and also asses the fabric and garment functional, aesthetic properties and special fabrics like geotextistile, protective textiles medical textiles etc

Course Outcomes (Cos):

Students will be able to:

1. Apply the advanced technology for fabric assessment and quality improvement
2. Evaluate and check the fabric for required garment products and quality
3. Find the cause and Suggest remedies for stitching defects
4. Make the fabric and garments for technical applications in goetextile, medical, defence, fire etc
5. Carry the test for special and non woven fabrics

Syllabus
UNIT I

Innovations in yarn testing instruments (dynamic, continuous and on-line testing of yarn quality), high speed yarn strength measuring instrument like tensojet, tensorapid etc and fabric testing.

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UBIT II

Standard tests, analysis of data and test reports such as HVI, AFIS, Classimate, Colour maching. Analysis of KES and FAST data.

UNIT III

Tests related to garment appearance and performance such as measurement of seam pucker, seams slippage, seam strength and buffer strength etc. testing of zippers, fastners and accessories etc.

UNIT IV

Testing of filtration characteristics, test for geotextiles, test for protective clothing, test of various form of medical textiles, moisture transmission through breathable fabrics,

UNIT V

Special tests like strength , abrasion, resilience etc for carpets and nonwoven fabrics.

References:

1. Saville B P, “Physical Testing of Textiles”, Woodhead Publishing Ltd, Cambridge, 2002.
2. Booth J E, “Principles of Textile Testing”, CBS Publishers and Distributors, New Delhi, 1999.
3. Angappan P & Gopalakrishnan R, “Textile Testing”, SSM Institute of Textile Technology, Komarapalayam, 2002.
4. Basu A, “Textile Testing”, SITRA Coimbatore, 2002.
5. V. K. Kothari, Ed., “Testing and Quality Management”, IAFL Publications, New Delhi, 1999.

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Name of Program M.TECH (Textile Engineering)
MTTX 104 (Elective-2)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL					
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*	Th	T	P	CREDITS
MTTX134	DCS	WASTE MANAGEMENT AND POLLUTION CONTROL IN TEXTILE INDUSTRY	60	20	20	0	0	3	1	0	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objective (CEOs):

Students will be able to gain knowledge of different waste of textile industry and recognize the types of waste and its disposal process with exposure to recycling of waste material economically.

Course Outcomes (Cos):

Students will be able to:

1. Reproduce textile product by using textile spinning, weaving and processing waste.
2. Plan the processes involve reusing of textile waste and its application.
3. Project complete layout of textile waste and its eco friendly disposal process.
4. Show and tell that reuse of waste and this project is viable or not.

Syllabus
UNIT I

Spinning waste: Its generation, classification, its re-use and management. Soft waste, hard waste. Different types of pollution in spinning industry.

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UNIT II

Weaving waste: Its generation, different types, its re-use and management. Different types of pollution in weaving industry. Its impact on human being.

UNIT III

Textile waste water characteristics: Chemical nature of discharged bath after each process, contribution of chemicals to the waste water load. Concept of biological and chemical oxygen demand. Textile waste water problem: Effect of waste-water on sewage and land.

UNIT IV

Chemical used in textile industry: Toxicity of various chemicals, viz alkalis, oxidizing and reducing agents, acids, carriers, resins and bleaching agents etc. Role of each chemical on waste water load.

UNIT V

Treatment of textile effluents: Primary, secondary and tertiary treatments in ETP. Colour remooval, various chemicals used in ETP.

Effluent Testing: Testing of BOD, COD, TOC and interforetalion of results.

References:

1. Asolekar S, “Environmental problems in chemical processing of textiles”1st Ed. NCUTE, Department of Textile Technology, IIT-Delhi, 2000.
2. Padma Vankar, “Textile Effluents” 1st Ed. NCUTE, Department of Textile Technology, IIT-Delhi,2002.
3. Edmund B, “The Treatment of Industrial Wastes” 2nd Ed. McGraw-Hill kogaskusha, New Delhi,1976
4. Peavy, Rowe and Tchobanoglous, “Environmental Engineering”2nd Ed. McGraw-Hill, Singapore, 1985.
5. Vaidya A A,” Production of Synthetic fibres”, Prentice-Hall India Ltd, New Delhi, 1988.

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Name of Program M.TECH (Textile Engineering)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
MTTX105	DCS	ADVANCE CAD IN TEXTILES	0	0	0	30	20	0	2	4	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objective (CEOs):

Student will expose to the functions of Advanced CAD in Textile and conceptual knowledge to the Industry as a Pattern Designer.

Course Outcomes (Cos):

Students will be able to:

1. Apply their knowledge on the various functions of the Advanced CAD in textile
2. Make different patterns for garment
3. Understand the garment process & knit, woven designing.
4. Use their knowledge for different tools of ADV.CAD in Textile

Syllabus

Principles of design, elements of design, marker planning, grading system, size chart, silhoueltes, shape and sizes, relationship to fashion, different dart system, black measurement, basic information regarding software, study latest software system.

Practice block making on garment software, variant file, adjustment of different view of garment components, making of different patterns with seam allowances, different techniques of pattern making, notches, curve, etc. marker creation.

Mood board, story board making, simulation, use of yarn library, knit and weave structure, weave library.

Vector, use of different drawing tools, bitmap pictures, different studios, color pallatte.

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List of References:

1. Mens wear pattern making, Alam Parwez Khan, Punkaj Pub. Delhi, 2007
2. Ten steps to fashion freedom, Mayfield

LIST OF PRACTICALS:

1. To study the basic terminologies of Design.
2. To study the basic terminologies of Pattern Making.
3. Introduction & installation of Lectra s/w.
4. To prepare a Draft of men's shirt. (According to Specification)
5. To prepare Marka Plan of shirt on graph paper & calculate the consumption of material.
6. To Grade the shirt pattern in 3 sizes (S, M, L- 40, 42, 44-on graph paper).
7. To study the Modaris s/w in detail with their tools.
8. To prepare a Draft of a men's shirt. (According to Specification) on Modaris s/w.
9. To Grade the shirt pattern in 3 sizes (S, M, L- 40, 42, 44) on Modaris s/w.
10. To study the Diamino s/w in detail with their tools
11. To prepare efficient Marka Plan of shirt on Diamino s/w. (Take the print out).
12. To study the Weave s/w in detail with their tools.

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Name of Program M.TECH (Textile Engineering)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
MTTX106	DCS	TECHNICAL SEMINAR	0	0	0	0	50	0	1	2	2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks

Course Educational Objectives (CEOs):

1. To improve the verbal communications and presentations skill of students.
2. To provide the extra knowledge on the topics beyond the syllabus.

Course Outcomes (COs)

Student will be able to

1. Communication verbally with proper presentation skills
2. Develop the interaction skills.
3. Design the power point presentation of various topics.

Course Contents:

Each student is required to deliver at least four presentations throughout the semester. The duration of presentation is maximum 10 minutes and 5 minutes for question answer. Assessment will be done based on their presentation skill, communications skill and knowledge on the topics.

References:

1. Various websites, journals and magazines, reference books etc.

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Name of Program M.TECH (Textile Engineering)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
MTTX107	DCS	COMPREHENSIVE VIVA	0	0	0	50	50	0	2	4	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks

Course Educational Objectives (CEOs):

1. To improve the recalling capacity of the various subjects to give a thorough exposure in textile engineering subjects.
2. Course will provide the analytical knowledge on the interrelationship between various subjects which help to design the project work.

Course Outcomes (COs)

Student will be able to

1. Analyse the problem related to the various subject of the textile engineering.
2. Design and solve the problem related to their project works.
3. Create the solutions of the various problem faced during their research work.

Course Contents:

Each student is required to spend their time in the library to study the various subject and report to the concern faculty where the faculty will conduct viva and explain the probable answer. At the end of the semester the students has to appear in front of internal and external examiner for comprehensive viva.

References:

2. Various websites, journals and magazines, reference books, textbook, various booklents, etc.

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