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SHIVAJI UNIVERSITY, KOLHAPUR.

Revised Syllabus of

(M.Text.(Textile Technology) Sem –I & Sem.-IV)

To be introduced from the academic year 2010-11
(i.e. from June 2010) Onwards

(Subject to the modifications will be made from time to time)

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-I

ADVANCES IN YARN MANUFACTURING TECHNOLOGY – I

Lectures	:	3 hrs/week
Assignment	:	1 hr/week
Theory Paper	:	100 Marks
Term Work	:	50 Marks
Subject Total	:	150 marks

1) A critical study of factors affecting opening, cleaning and blending in blowroom. Role of air currents in blowroom. Critical design aspects of modern blowroom machinery. Research Papers – i) Survey of blow room practice – F. T. Peirce ETAL. Journal of Textile Institute – 1954 ii) The development of cleaning ranges in adoption to changing properties of raw materials – F Leifield, ITB 1/90.

2) Basic theories of carding. Critical design aspects in different zones of modern card. Role of air currents in card. Design developments of card wires. Conditions of fibre transfer. Transfer efficiency and quality. Factors affecting transfer efficiency. Configuration and disorder of fibres in a card sliver. Nep formation / removal in card. Research Papers – i) Some theoretical and experimental data relating to the design of high sped cards – V. V. Krylov, Tech. of Textile industry USSR 1962 No. 2. ii) Fibre arrangement in card sliver – W. E. Morton and R. S. Summers – JTI 1949.

3) Importance of combing preparation. Critical design aspects in various components of a comber. Researches on combing preparation. Fibre fractionation at comber, factors affecting fractionation in a comber. Design developments in modern comber. Research Papers – i) Effect of hooks in laps on fractionation on cotton combing – R. G. Owalekar – TRJ 1969. 2. ii) Fractionating efficiency of comber - R. G. Owalekar – 7th Joint Technological Conference – P-108.

4) Theories of drafting. Causes for irregularity in drafted strand. Role of fibre friction in drafting – Drafting force – Definition, Measurement and study of factors affecting drafting force. Design significance of modern drawframes and speed frames. Research Papers – i) Fibre motion in roller drafting – Gar Faster – JTI 1956. ii) A study of the theory of drafting force in roller drafting process – Ismail Dogu – TRJ - 1971. iii) Reiter manual on Auto levellers and setting

5) Auto levelling :- Concept and necessity. Types of auto levellers, their applications and evaluation.

6) Fibre Blending – Importance – Methods of blending and analysis. Blend intimacy and measures of blend variation, significance of developments in blending techniques. Research Papers – i) A measure of fibre distribution in blended yarns and its application to the determination of the degree of mixing achieved in different processes – AE DE barr & P. G. Walker – JTI 1957.

Note: Term work for this subject will be based on above syllabus.

REFERENCE BOOKS :-

1) The Textile Institute Publication - Manual of Textile Technology – Short Staple Spinning Series
   Vol.I – The Technology of short staple spinning by W. Klein.
   Vol.-II – A Practical Guide to Opening & Carding by W. Klein.
   Vol.III – A Practical Guide to Combing & Drawing – W. Klein.
   Vol.VI - Man-made fibre spinning – W.Klein
2) Series publications of NCUTE Training Programs
3) 'Fundamentals of Spun Yarn Technology' by Carl A. Lawrence.
4) 'Spun Yarn Technology' by Eric Oxtoby.
5) Yarn Production-Teoratical Aspects by P.Grosberg & C.Iype.
6) Textile Progress Series by Textile Institute,Manchester.

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-I

ADVANCES IN FABRIC MANUFACTURING TECHNOLOGY-I

Lectures	:	3 hrs/week
Assignment	:	1 hr/week
Theory Paper	:	100 Marks
Term Work	:	50 Marks
Subject Total	:	150 marks

1) Technological significance in the design development of automatic winding machine with respect to unwinding accelerator, auto speed, yarn tensioners, various splicers, clearers & fault removal, contamination clearers, yarn guide drum & winding unit, length & diameter measurement etc.

2) Influence of winding process on yarn quality, package build. Various package quality for different application such as weaving, knitting, dyeing etc. Research articles based on unwinding yarn tension, yarn clearers, package build, speed & its variation, changes in yarn quality during winding.

3) Modern electronic control system & their role in optimizing quality & productivity. Techno-economical aspects of winding.

4) Technological significance in the design developments of beam and sectional warping machine with respect to creels, design, tensioners, drum design, Drive, geometrical aspects of machines. Modern Electronic control systems.

5) Influence of warping process on yarn quality, beam build. Research articles based on yarn tension, speed, beam build etc.

6) Technological significance in the design development of sizing machine with respect to creel saw box, pre-drying, drying, and headstock. Modern quality control systems such as temperature, size pick up, stretch control, moisture control, PLC Drive etc. Synthetic ingredients & their suitability.

7) Influence of process parameters on yarn quality and processing behaviour

8) Automation in sizing process, size recipe formulation & re-circulation. Modern electronic control systems. Research articles based on tension, stretch, size recipe & machine design etc.

9) **Knitting**: Study of design, functional and constructional aspects of different zones of circular knitting machines, such as yarn feeding zone, loop forming zone and fabric takedown zone. Effect of machine and material parameters on fabric quality. Geometrical aspects of knitting fabrics. Such as wale and coarse density, stitch length, Run in ratio, Tightness factor. Study of research articles on robbing back, yarn tension, Spiriality, dimensional stability, fibre fly generation, barriness, shrinkage, effect of yarn quality parameters, yarn lubrication, Prediction of fabric dimensional properties, effect of processing on fabric dimensional characteristics.

Note: Term work for this subject will be based on above syllabus.

REFERENCE BOOKS :-

1) Modern Preparation & Weaving Machinery by A. Ormerod.
2) Manual of Non Woven by Dr. Radko Krima.
3) Geotextiles by N.W.M. John.
4) Warp Sizing by J.B. Smith.
5) Textile Maths Vol-III by J.E. Booth.
6) Circular Knitting – by Chandra sekhar Iyer.
Circular Knitting Technology – IIT, Delhi, Publication.

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-I

THEORY OF TEXTILE STRUCTURE – I

Lectures	:	3 hrs/week
Assignment	:	1 hr/week
Theory Paper	:	100 Marks
Term Work	:	50 Marks
Subject Total	:	150 marks

1. A brief review of fibre structure and morphology, Structures of different fibres and their effect on fibre properties.

2. Tensile properties of fibres – Effects of variability – Elastic recovery – Time effects – fibre stress and deformation other than tensile – Bending and bending fatigue – shear properties – loop strength and knot strength – Torsional properties, Model theory of visco elasticity, rubber elasticity.

3. Theories of mechanical properties – variety of approaches – structural effect in various fibres – Theories of time dependence. Thermo mechanical response of fibres.

4. Nature and mechanism of Heat setting of fibres – physics of heat setting – Heat setting and structural parameters – Mechanism of heat setting – Thermodynamic Argument of heat setting – multiple sequence – structural model.

5. Characteristics of different yarn structures – structural parameters – fibre configuration in yarn – Ideal migration, characterization of migration behaviour, theory of migration, migration in spun yarns. Yarn structure in relation to the aesthetic and tactile qualities of apparel fabrics.

6. Twist in yarn – geometry of twisted yarns – yarn size and twist factor – contraction because of twist – twist and fibre packing in yarn – (ideal and real) – effect of twist on yarn diameter and volume – Twist and yarn bending measurement of yarn diameter.

7. Extension behavior of continuous filament yarns - analysis for small & large extension, analysis with lateral forces. Energy Method of prediction of load-elongation curve.

   Rupture behaviour of continuous filament yarns – Rupture behaviour of low and high twist yarn, extension of continuous filament yarn. Effect of permanent extension, buckling and migration on tensile behavior of continuous filament yarn.

8. Qualitative explanation of the strength of staple yarns. Traditional and modified approach of rupture behavior of staple yarn.

Note: Term work for this subject will be based on above syllabus.

REFERENCE BOOKS :-

1. Fibre Science – Edited by J.M. Preston, Published by The Textile Institute, Manchester.
2. Cotton Testing by Steadman,
3. Physical Testing of Textiles by B.P. Saville
4. Physics of Fibres – An Introductory Survey – Woods H.J. published by The Institute of Physics – London, 1955.
5. Physical Properties of Textile Fibres – Morton W.E. and Hearle J.W.S. published by The Textile Institute Manchester.
6. Fibre Microscopy – Stores J.L. – published by London National Trade Press.
7. Structure / Property relationship in Textile Fibres – Textile Progress Vol.20, No.4 – The Textile Institute, Manchester.
8. Textile Fibres Yarns and Fabrics – Kaswell E.R. published by Reinhold Publishing Corporation – New York, 1954.
9. Structural Mechanics of fibres, yarns & fabrics by Hearle, Grosberg and Backer.
10. Textile Yarn by Martindale and Goswami.

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-I

ADVANCED COMPUTER APPLICATIONS IN TEXTILES

Lectures	:	3 hrs/week
Assignment	:	1 hr/ week
Theory Paper	:	100 Marks
Term Work	:	50 Marks
Subject Total	:	150 Marks

1) Artificial Neural Networks :-

Biological Neuron & their artificial models, Models of artificial neural neuron, Neural processing, learning & adaptation, Neural Network learning rules, Multilayer feed forward networks, Generalised error back pro-projection training algorithm, application of ANN in textiles : Yarn strength prediction using ANN. Case study.

2) E-Commerce :-

The scope of electronic commerce, definition of electronic commerce, E-commerce and the trade cycle, Electronic markets, Electronic data interchange, Internet Commerce, Business Strategy in E-commerce, The value chain, supply chain, Porter's value chain model. Inter organization value chains, Business to business E-commerce, Inter organizational transaction, The credit transaction trade cycle. Advantages & disadvantages of Electronic markets. Application of E-commerce in textile industries.

3) Introduction to ERP

Introduction to ERP, Basic ERP concepts, Justifying ERP Investments, RISK of ERP, Benefits of ERP.

4) ERP and Technology

ERP and Related Technologies, Business Intelligence (BI), Business Process Reengineering (BPR), Product Life Cycle Management, Supply Chain Management (SCM), Customer Relationship Management (CRM).

5) SAP

Architecture of SAP R/3, SAP Integrated- Analysis, Implementation, and Design, Three-Tier Architecture, Need of Multi-tier Architecture, Integrating Environments.

Note: Term work for this subject will be based on above syllabus.

LIST REFERENCE BOOKS:-

1) Introduction to Artificial Neural Systems – J.M Zurada, Jaico Book.
2) E-Commerce – David Whiteley, TmH.
3) ERP Demystified - Alexis Leon, TMH
4) Enterprise Resource Planning – Alexis Leon, TMH.
5) Information Technology for Management,- Turban-McLean. Wetherbe
6) SAP R/3 SAP Architecture, Administration, Basis, ABAP Programming with MM and SD Modules – Dreamtech Press

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-I

HIGH PERFORMANCE FIBRES (ELECTIVE-I)

Lectures	:	3 hrs/week
Assignment	:	1 hr/ week
Theory Paper	:	100 Marks
Term Work	:	50 Marks
Subject Total	:	150 Marks

High performance fibres :Introduction to High Performance Fibres.

Aramids: - Manufacturing, properties of fibres, and applications.

Gel spun high performance polyethylene fibres:-Manufacture, fibre characteristics and applications,

Carbon Fibres: Introduction, PAN and pitch based carbon fibres, physical properties and applications.

Glass Fibres: fibre manufacture, properties and Applications

Ceramic Fibres: Introduction, silicon carbide based fibres, Alumina based fibres. Single crystal oxide fibres.

Chemical resistant fibres and thermally resistant fibres: Chlorinated fibres: PVDC,Fluorinated Fibres: PTFE, PVF, PVDF & FEP,Poly (entheretherketones): PEEK,Poly (phenylene sulphide): PPS,Poly (enther imide) : PEI,semi-carbon fibres: oxidized acrylic, poly benzimidazole, PBI Polybenzoxazoles, PBO.

Note: Term work for this subject will be based on above syllabus.

REFERENCE BOOKS

1. High Performance Fibres by J. W. S. Hearle
2. Carbon Fibres by Donnet & Bansal
3. Hand book of Fibres Science & Technology : High Technology Fibres edited by Manachem Lewin & Jack Preston
4. New Fibres by Hongu and Phillips.
5. Kevlar Aramid Fibres by yang.

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-I

TECHNICAL TEXTILES (ELECTIVE-I)

Lectures	:	3 hrs/week
Assignment	:	1 hr/ week
Theory Paper	:	100 Marks
Term Work	:	50 Marks
Subject Total	:	150 Marks

Overview of Technical Textiles: Classification, products, market overview and growth projections of technical textiles.

Automotive Textiles: Application of textiles in automobiles. Requirement s of pneumatic tyres, airbags and belts. Their production and properties of textiles used in these applications.

Architectural and Construction Textiles: Introduction, Fabrics for Architecture and Construction ,Applications of Coated Fabrics in Building Structures, Awnings and Canopies, Textiles as Roofing Materials, Storage Vessels, Fibre Reinforced Concrete and Cements, Textiles for Acoustic and heat Insulation

Protective Textiles: Requirements of textiles used against fire, chemicals, ballistic, wind, rain. Interactions between protection and thermal comfort

Textiles in sports: Physiological comfort of sportswear .Types of textiles used in the manufacturing of sports textiles.Functional requirements of these textiles.

Military and Defense Textiles: Introduction ,Protective Clothing and Individual Equipment,Textile Used in Defense Systems and Weapons.

General Industrial Textiles: Textiles in Agriculture,Textile in Electronics,Banners and Flags,Textile Reinforced Products,Transport Bags and Sheets,Fabrics to Control Oil Spills,Canvas Covers and Tarpaulins,Ropes and Nets,Home and Office Furnishings,Miscellaneous Applications

Functional requirements and types of textiles used for paper making, medical agricultural, packaging and footwear.

Note: Term work for this subject will be based on above syllabus.

REFERENCE BOOKS

1. The Textile Institute Advances in Fibre Science by S. K. Mukhopadhya
2. Textile Fibres: Developments & Innovations Vol. 2 by V. K. Kothari
3. S.Adanur “Wellington Sears Handbook of Industrial textiles”, Technomic Publishing Co., Inc Lancaster, Pennylvania ISBN: 1-56676-340-1, 1995.
4. Mukhopadhyay, S.K. and partridge J.F,’ Automotive Textiles’, Text.Prog, Vol. 29, No.1/2, 1998, ISBN: 1870372212.
5. Horrocks, A.R and Anand S, ‘Technical Textiles’, Text.Inst. 1999, ISBN: 1855733854.

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-I

SEMINAR - I

Practical	:	1 hr/ week
Term Work	:	50 Marks
Subject Total	:	50 Marks

Seminar-I should be based on the literature survey on any topic relevant to textile technology (should be helpful for selecting a probable title of dissertation). Each student has to prepare a write up of about 15 pages of "A4" size sheets and submit it in duplicate as the term work. The student has to deliver a seminar talk in front of the faculty members of the department and his/her classmates. The faculty members, based on the quality of the work and preparation and understanding of the candidate, shall do an assessment of the seminar internally – jointly.

Some marks should be reserved for the attendance of the student in the seminars of the others students.

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-II

ADVANCES IN YARN MANUFACTURING TECHNOLOGY – II

Lectures	:	3 hrs/week
Assignment	:	1 hr/week
Theory Paper	:	100 Marks
Term Work	:	50 Marks
Subject Total	:	150 marks

1) Basic stages in spinning & their influence on final product. Design developments in various components of ring frame, such as drafting, spindles, ring, travellers & drives etc. Spinning geometry of ring frames. Twist flow in ring frame. Twist / tension interaction and end breaks. Mechanisms of end breaks. Generation and control of hairiness in ring spinning – development of compact spinning. Research Papers – i) Spinning geometry and its significance – W. Klein ITB 2/90. ii) Letest trends in cots and aprons – Mr. P. K. Basu JTA 1999. iii) Ring traveller interaction & spinning performance – R. R. Salhotra – NCUTE on Ring frame. iv) Design aspects of high speed rings, spindles & travellers – Sudhir Sharma NCUTE programme.

2) Yarn Conditioning – Concepts and theory of yarn conditioning at lower temperatures. Study of effect of yarn conditioning on yarn properties and processing behaviour. Design principles of various yarn conditioning machines used in the industry.

3) Rotor spinning – Technical developments in rotor spinning machine – Modification in the design of spinning unit – developments in rotor drives – yarn monitoring. Automation in rotor spinning machines. Structure and properties of yarn produced. Research Papers – i) Auto coro 360 with fancynation new concepts for fancy yarns – Waltrand jansen – ATJ 2004. ii) Developments in rotor spinning – Dr. R. Chattopadhyay – Advances in yarn manufacturing technology – IIT publication. iii) New spinning technologies – Dr. S. M. Ishtiaque – Advances in yarn manufacturing technology – IIT publication.

4) Air jet spinning – Technical developments in air jet spinning – Structure and properties of air jet spun yarns, Evolution of vortex spinning, critical review of both systems. Research Papers – i) A new spinning technology air vortex spinning – Dr. J. Hayavadana etal Man made textiles in India 2005. ii) Structure & properties of air jet yarns – Jasesh J. etal – TRJ 1990.

5) Friction Spinning – Technical developments in friction spinning – structure & properties of friction spun yarn. Evolution of different spinning technologies based on friction spinning system. Research Papers – i) Yarn tension in friction spinning – H. Stalder & H. Soliman – ITB 3/86. ii) Mechanism of OE friction spinning – Dr. J. Lunenschloss – ITB 3/85.

6) Texturising – Critical evaluation of different texturising system – Significance of developments in false twist and air texturising technologies. Factors influencing the properties of false twist & air textured yarns.

Note: Term work for this subject will be based on above syllabus.

REFERENCE BOOKS:-

1) The Textile Institute Publication - Manual of Textile Technology – Short Staple Spinning Series

Vol.I – The Technology of short staple spinning by W. Klein.

Vol.-IV – A Practical Guide to Ring spinning by W. Klein.

Vol.V – New Spinning Systems – W. Klein.

Vol.VI - Man-made fibre spinning – W.Klein

2) Series publications of NCUTE Training Programs.
3) Textile Progress Series by Textile Institute,Manchester
4) Fundamentals of Spun Yarn Technology by Carl A. Lawrence
5) Yarn Production-Theoretical Aspects by P.Grosberg & C.Iype.
6) Yarn Texturising Technology by Hearle.

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-II

ADVANCES IN FABRIC MANUFACTURING TECHNOLOGY-II

Lectures	:	3 hrs/week
Assignment	:	1 hr/week
Theory Paper	:	100 Marks
Term Work	:	50 Marks
Subject Total	:	150 marks

1. Limitation of shuttle loom with respect to loom speed, picking, shuttle checking, sley motion, energy consumption.
2. Theory of weft insertion by projectiles, developments in torsion rod picking motion, geometrical aspects of torsion rod, energy for picking, projectile flight & checking, developments in projectile weaving machines.
3. Theory of weft insertion by rapiers, developments in rapier heads, positive, rapiers, developments in rapier drives, developments in rapier weaving.
4. Theory of weft insertion in air and water jet picking, developments in machine design, nozzles.
5. Design developments in high speed shedding devices, cam, dobby and jacquard motions, developments in cam beat-up.
6. Developments in warp let off and take-up motions, motorized electronic take-up & let off.
7. Control systems – weft feeders, warp & weft monitor systems, selvedge, colour control, lubrication clearing, drive, intelligent monitoring system. Yarn quality and preparation requirements for high speed weaving.
8. Non wovens- Raw material characteristics & effect on fabric properties, characteristics of needle punched, adhesive bended, thermal bonded & spun bended non-wovens, process variables and their effect on structure & proportion of non-wovens. Developments in non-woven machines.

9. Technical Textiles – Market overview & growth projection, products, Filtration- dry & wet filtration, mechanism of separation, requirements for good filtration, fibre & fabric selection, automotive textiles – scope, products, applications, requirements & design for pneumatic tyres, airbag & belts methods of productin & properties.
10. Engineering approach to fabric formation, shed geometry pick spacing, bumping conditions, fabric cover.

Note: Term work for this subject will be based on above syllabus.

Reference Books:

1) Weaving Technology & Operation by Allan Ormerod.
2) Shuttleless Weaving Machines by – Svaty.
3) Principles of Weaving by Robinson & Marks.
4) Weaving Handbook - Sulzer publication
5) Handbook of Technical Textiles

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-II

THEORY OF TEXTILE STRUCTURE – II

Lectures	:	3 hrs/week
Assignment	:	1 hr/week
Theory Paper	:	100 Marks
Term Work	:	50 Marks
Subject Total	:	150 marks

1. Uniformity characteristics of yarn – methods of measurement – types of irregularities-factors affecting irregularity-measurement of yarn imperfection and faults – mechanical, material and other factors affecting yarn irregularity, imperfection and faults.

2. Yarn Engineering – Translation of fibre properties in to your properties in case of single component spun yarn and blended yarns- Prediction of yarn strength from fibre properties using different techniques.

3. Fabric geometry – The geometrical properties of plain cloths – Pierce geometry of woven cloth – The geometry of jammed condition – geometry & non – plain fabrics, structure of non woven fabrics and it's relation to end use behavior.

4. Geometry of knitted fabrics. Empirical relationships, Geometrical properties of warp & weft knitted structures.

5. The tensile properties of woven cloths – geometrical changes during extension of cloth – The load extension modulus – the generalised modulus of a fabric.

6. The buckling of fabrics – buckling of elastic materials, more complex forms of buckling. Compressional resilience – terms and definitions, significance, factors influencing compressional resilience, measurement of compressional resilience.

7. Shear and drape of fabrics – nature of shear – shear properties – experimental study of drape – subjective assessment of drape – nature of fabric deformation in drape.

9. Fabric soiling – Soil removal – Laundering & dry cleaning – mechanics of soling – evaluation of soling characteristics of fibres – electrostatic properties of fibres and soiling-soil removal characteristics of fibres and fabrics – General considerations of laundering and dry cleaning.

Note: Term work for this subject will be based on above syllabus.

REFERENCE BOOKS:-

1. Physical Testing of Textiles by B.P. Saville
2. Textile Fibres Yarns and Fabrics – Kaswell E.R. published by Reinhold Publishing Corporation – New York, 1954.
3. Structural Mechanics of fibres, yarns & fabrics by Hearle, Grosberg and Backer.
4. Physical Testing and quality control, Textile progress, Vol.23, No.1/2/3, by K. Slater.
5. Mario Bona – Textile Quality (Euratex Series).
6. Testing & Quality Management by Dr.V.K. Kothari (IIT-Delhi)

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-II

STATISTICS FOR TEXTILE MILL MANAGEMENT

Lectures	:	3 hrs. / Week
Assignment	:	1 hr. / Week
Theory Paper	:	100 Marks
Term Work	:	50 Marks
Subject Total	:	150 marks

1. Multivariate data & its analysis:

Multiple and partial correlation, measures of Multiple and partial correlation, Examples for the data with three variables only.

Multiple regression, planes of regression, Examples for the data with three variables only.

2. Analysis of Variance:

One-way analysis of variance, mathematical model, ANOVA table & examples.

Two-way analysis of variance one observation per cell & with m observation per cell, Mathematical models, ANOVA tables & examples.

3. Design of Experiments:

Basic Designs: CRD & examples as one-way, RBD & examples as two-way. LSD & examples of LSD.

4. Factorial Experiments:

2^n factorial experiments: Introduction, Analysis of 2^n factorial experiments. Examples for 2^n factorial experiments.

Introduction of 3^n and higher order factorial experiments.(No examples)

Introduction of fractional factorial experiments.(No examples)

Introduction of response surface designs (No examples)

Taguchi techniques for reduction and optimization in design of experiments (No examples)

5. Linear programming Problem:

Introduction, formulation of LPP, graphical and simplex methods for finding solutions of LPP. Examples.

6. Transportation Problem:

Introduction, methods for finding initial and optimum solutions of transportation problem. Examples.

7. Assignment problem:

Introduction, method for solving assignment problem. Examples.

8. Network Analysis:

Programme Evaluation and Review Techniques(PERT): Introduction, Slack time critical path, Probability of completion of projects. Examples.

Ctitical path method (CPM): Introduction, Time estimates, Floats, Critical path. Examples.

Note: Term work for this subject will be based on above syllabus.

REFERENCE BOOKS:-

1) Modern Elementary Statistics by J. Fruend.
2) Mathematical Statistics by J. Fruend.
3) Probability & Statistics for engineers by Johnson.
4) Applied Statistics & probability for engineers by Montgomery.
5) Experimental Designs by Cochran & Cox.
6) Design of Experiments by Montgomery.

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-II

PROJECT PREPARATION, APPRAISAL & IMPLEMENTATION

(ELECTIVE-II)

Lectures	:	3 hrs/week
Assignment	:	1 hr/week
Theory Paper	:	100 Marks
Term Work	:	50 Marks
Subject Total	:	150 marks

1) Overview – Capital expenditure, Phase of capital budgeting, Project development cycle, Objectives of investment, decision-making, Risk & return.

2) Identification of investment opportunities – Governmental regulatory framework – Generation & screening of project ideas – Project identifications for an existing company.

3) Market & demand analysis – Information required for market & demand analysis – demand forecasting methods – market planning.

4) Technical Analysis – Material inputs & utilities – Manufacturing process / technology – Plant capacity – location & site – structures & civil works – Machineries & equipments – Project charts & layouts – Work schedule – Need for tendering alternatives.

5) Financial Analysis – Cost of Project – Means of finance – Estimation of Sales & Production – Cost of production – Working capital requirement & financing – Profitability projections – Break even point – Project cost flow statements – Projected balance sheet – Multi – year projection.

6) Time value of money – Future value of single amount, Future value of an annuity –Present value of single amount – Present value of an annuity.

7) Cost of Capital – Basic concepts – Cost of debt – cost of preference capital – cost of Equity Capital – Weighted average cost of capital – Marginal cost of capital-Cost of capital for a new company.

8) Appraisal criteria – Urgency, Pay back period – Accounting, Debt service coverage ratio, Rate of Return, Net present value – Internal rate of return – Annual capital charge – Investment appraisal in practice.

9) Analysis of Risk – Types & measurement of project risk – Analytical derivation or simple estimation – Sensitivity Analysis – Scenario analysis – Selection of a project-Risk analysis in practice.

10) Project implementation – Forms of project organization – Project planning – project control – Human aspects of project management – Pre-requisites for successful project implementation.

11) Review – Initial review, performance evaluation.

Note: Term work for this subject will be based on above syllabus.

REFERENCE BOOKS :-

1) Textile Project Management by A. Ormerod, The Textile Institute Publication.
2) Goal Directed Project Management by E.S. Andersen, K.V. Grude & Tor Hang, Coopers & Cybranl Publication.
3) Project, Planning Analysis, Selection Implementation & Review by Prasanna Chandra, Tata McGraw Hill Publishing Co. Ltd.,
4) Industrial Organisation & Engg. Economics T.R. Banga & S.C. Sharma, Khanna Publishers, Delhi.

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-II

MANAGEMENT OF TEXTILE PRODUCTION (ELECTIVE-II)

Lectures	:	3 hrs/week
Assignment	:	1 hr/week
Theory Paper	:	100 Marks
Term Work	:	50 Marks
Subject Total	:	150 marks

Indian Textile Industry: Structure, production and exports. Textile Policy. Sickness of Textile Industry- Analysis and options. Essentials of production management, production systems, classification.

Material management: Role of material management techniques, purchase management, acceptance sampling and inspection, vendor rating system, inventory management.

Production, planning and control: types of production systems and problems of planning and control, product section design, process planning, forecasting, planning of batch, mass and job shop system. Machine balancing. Layout and material handling. Machine assignment and allocation of jobs. Maintenance management: maintenance concepts, maintenance strategies, maintenance planning. Productivity and improvement techniques.

Quality management: Introduction to TPM/TQM, concepts of value and quality assurance, total quality control, quality circles, ISO 9000. Marketing management: fundamental of industrial marketing, industrial buyer behaviour model.

Marketing: systems selling, role of service, marketing planning and marketing strategies, market research.

Enterprise resource planning: Role of information in managerial decision making, information needs for various levels of management, decision makers, management information system, resource monitoring and control. Product mix. Case studies.

Note: Term work for this subject will be based on above syllabus.

Reference Books

1) Essential of Management – by Harold Koontz & Heinz, Weihrich – Tata McGraw- Hill Publishing Company Ltd., New Delhi.

2) Advanced Cost & Management Accounting by P.K. Sikdar – Viva Books Pvt. Ltd., New Delhi.

3) Industrial Engineering & Management by O.P. Khanna & A. Sarup, Dhanapat Rai Publications (P) Ltd., Delhi.

4) Dynamics of Entrepreneurial Development & Management by Vasant Desai – Himalaya Publishing House – Delhi.

5) How to Read a Balance Sheet – An ILO Programmed Book – Oxford & IBH Publishing Co. Pvt. Ltd., Delhi.

6) Enterpreneurial Development by S.S. Khanta , S. chand & Company Ltd., Delhi – 110 055.

7) Fundamentals of Marketing by W.J. Stanton, M.J. Etzel B.J. Walker – McGraw-Hill, Inc – New York, St. Laouis etc.

8) Industrial Organisation & Engineering Economics by S.C. Sharma & T.R. Banga – Khanna Publishers – 2-B, Nath Market, Nai Sorak, Delhi – 110 006.

9) Marketing Management By Philip Kotler – Prentice – Hall of India Pvt. Ltd., New Delhi – 110 001.

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-II

SEMINAR - II

Practical	:	1 hr/ week
Term Work	:	50 Marks
Subject Total	:	50 Marks

Seminar - II shall be based on tentative topic on dissertation such as review paper on some specific well defined area/specialized stream of Textile Technology. Each student has to prepare a write up of about 15 pages of "A4" size sheets and submit it in duplicate as the term work. The student has to deliver a seminar talk in front of the faculty members of the department and his/her classmates. The faculty members, based on the quality of the work and preparation and understanding of the candidate, shall do an assessment of the seminar internally – jointly. Some marks should be reserved for the attendance of the student in the seminars of the others students.

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-III

SEMINAR - III

Practical	:	1 hr/ week
Term Work	:	50 Marks
Subject Total	:	50 Marks

Seminar – III shall be based on the work carried out for dissertation. This may cover the point right from various areas considered and analysis, the relevance feasibility and scope of work for finally selected topic, alternative solution and appropriate solution. Each student has to prepare a write up of about 20 pages of “A4” size sheets and submit it in duplicate as the term work. The student has to deliver a seminar talk in front of the faculty members of the department and his classmates. The faculty members of the department shall do an assessment, based on the quality of the work and preparation and understanding of the candidate. Some marks should be reserved for the attendance of the student in the seminars of the others students.

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-III

DISSERTATION

Practical	:	4 hrs/ week
Term Work	:	100 Marks
Subject Total	:	100 Marks

The term work under this, submitted by the student shall include –

1. Work diary maintained by the student and counter signed by his guide.
2. The contents of work diary shall reflect the efforts taken by candidate for

(a) Searching the suitable project work

(b) Visits to different factories or organizations

(c) Brief report of journals and various papers referred

(d) Brief report of web sites seen for project work

(e) The brief of feasibility studies carried to come to final conclusion

(f) Rough sketches

(g) Design calculation etc. etc. carried by the student.

The student has to make a presentation in front of panel of experts in addition to guide as decided by department head.

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-IV

SEMINAR - IV

Practical	:	1 hr/ week
Term Work	:	50 Marks
Subject Total	:	50 Marks

Seminar – IV shall be based on the progress of the dissertation work carried out. This may cover the various practicals / survey work done. Each student has to prepare a write up of about 20 pages of “A4” size sheets and submit it in duplicate as the term work. The student has to deliver a seminar talk in front of the faculty members of the department and his classmates. The faculty members of the department shall do an assessment, based on the quality of the work and preparation and understanding of the candidate. Some marks should be reserved for the attendance of the student in the seminars of the others students.

M.TEXT.(TEXTILE TECHNOLOGY) SEMESTER-IV

DISSERTATION

Practical	:	4 hrs/ week
Term Work	:	50 Marks
Oral Exam.	:	200 Marks
Subject Total	:	250 Marks

The dissertation submitted by the student on topic already approved by university authorities on the basis of initial synopsis submitted by the candidate shall be according to following guidelines – Format of dissertation report – The dissertation work report shall be typed with double space on A4 bond paper. The total number of pages shall not be more than 150 and not less than 60. Figures, graphs, annexures etc. be added as per requirement. The report should be written in the following format.

1. Title page
2. Certificate
3. Acknowledgement
4. Index
5. Abstract
6. Introduction
7. Literature survey
8. Plan of work
9. Results and discussions
10. Conclusions
11. References
12. Annexure

D.K.T.E.SOCIETY'S TEXTILE & ENGINEERING INSTITUTE, ICHALKARANJI.

Equivalence of subject at M.Text. to Revised M.Text. Course.

M.TEXT.- T.T. (TEXTILE TECHNOLOGY) SEMESTER-I

SR. NO.	COURSE	PRE-REVISED SUBJECTS	SEM-ESTER	REVISEI
1.	M.Text.(TT)	Advances in Yarn Manufacturing Technology-I	I	Advances in Ya Technology-I
2.	M.Text.(TT)	Advances in Fabric Manufacturing Technology-I	I	Advances in Fa Technology-I
3.	M.Text.(TT)	Theory of Textile Structures-I	I	Theory of Texti
4.	M.Text.(TT)	Advanced Computer Applications in Textiles	I	Advanced Com in Textiles
5.	M.Text.(TT	---	I	Elective-I
6	M.Text. (TT)	Seminar-I	I	Seminar-I

M.TEXT.- T.T. (TEXTILE TECHNOLOGY) SEMESTER-II

SR. NO.	COURSE	PRE-REVISED SUBJECTS	SEM-ESTER	REVISEI
1.	M.Text.(TT)	Advances in Yarn Manufacturing Technology-II	II	Advances in Y Technology-II
2.	M.Text.(TT)	Advances in Fabric Manufacturing Technology-II	II	Advances in Fa Technology-II
3.	M.Text.(TT)	Theory of Textile Structures-II	II	Theory of Text
4.	M.Text. (TT)	Statistics & Design of Experiments	II	Statistics for T Management
5.	M.Text.(TT)	Project Preparation, Appraisal & Implementation	II	Elective-II (Pro Appraisal & Im
6.	M.Text.(TT)	Seminar-II	II	Seminar-II

M.TEXT.- T.T. (TEXTILE TECHNOLOGY) SEMESTER-III

SR. NO.	COURSE	PRE-REVISED SUBJECTS	SEM-ESTER	REVISED SUBJECTS	SEMESTER
1.	M.Text.(TT)	Seminar-III	III	Seminar-III	III
2.	M.Text.(TT)	Dissertation	III	Dissertation	III

M.TEXT.- T.T. (TEXTILE TECHNOLOGY) SEMESTER-IV

SR. NO.	COURSE	PRE-REVISED SUBJECTS	SEM-ESTER	REVISED SUBJECTS	SEMESTER
1.	M.Text.(TT)	Seminar-IV	IV	Seminar-IV	IV
2.	M.Text.(TT)	Dissertation	IV	Dissertation	IV