Modified Scheme for

Bachelor of Technology (Textile Engineering) (Credit Based)

KURUKSHETRA UNIVERSITY KURUKSHETRA

Scheme of Studies/Examination

Semester III (w.e.f. session 2023-2024)

Sr. No.	Course No./Code	Subject	L:T:P	Hours/Week	Credits	Examination Schedule (Marks)				Duration of Exam (Hrs)
						Major Test	Minor Test	Practical	Total	
1	HTM-901A	Universal Human Values II : Understanding Harmony	3:0:0	3	3	75	25	0	100	3
2	PCC-TEX-217A	Textile Fibres	3:0:0	3	3	75	25	0	100	3
3	PCC-TEX-203A	Yarn Manufacturing-I	3:0:0	3	3	75	25	0	100	3
4	PCC-TEX-205A	Fabric Manufacturing-I	3:0:0	3	3	75	25	0	100	3
5	PCC-TEX-207A	Textile Chemical Processing-I	3:0:0	3	3	75	25	0	100	3
6	PCC-TEX-209LA	Textile Fibre - I Lab	0:0:4	4	2	-	40	60	100	3
7	PCC-TEX-211LA	Yarn Manufacturing-I Lab	0:0:2	2	1	-	40	60	100	3
8	PCC-TEX-213LA	Fabric Manufacturing-I Lab	0:0:2	2	1	-	40	60	100	3
9	PCC-TEX-215LA	Textile Chemical Processing-I Lab	0:0:2	2	1	-	40	60	100	3
Total				**25**	**20**	**375**	**285**	**240**	**900**	
10	*MC-901A	Environmental Sciences	3:0:0	3	-	100	-	0	100	3

*MC-901A is a mandatory credit-less course in which the students will be required to get passing marks in the major test.

Modified Scheme for

Bachelor of Technology (Textile Engineering) (Credit Based)

KURUKSHETRA UNIVERSITY KURUKSHETRA

Scheme of Studies/Examination

Semester IV (w.e.f. session 2023-2024)

S. No.	Course No./Code	Subject	L:T:P	Hours/ Week	Credits	Examination Schedule (Marks)				Duration of Exam (Hrs)
						Major Test	Minor Test	Practical	Total	
1	HSMC-TEX-216A	Entrepreneurial and Industrial Engineering	3:1:0	4	4	75	25	0	100	3
2	PCC-TEX-204A	Yarn Manufacturing-II	3:1:0	4	4	75	25	0	100	3
3	PCC-TEX-206A	Fabric Manufacturing-II	3:1:0	4	4	75	25	0	100	3
4	PCC-TEX-208A	Textile Chemical Processing-II	3:1:0	4	4	75	25	0	100	3
5	PCC-TEX-210LA	Yarn Manufacturing-II Lab	0:0:2	2	1	-	40	60	100	3
6	PCC-TEX-212LA	Fabric Manufacturing-II Lab	0:0:2	2	1	-	40	60	100	3
7	PCC-TEX-214LA	Textile Chemical Processing-II Lab	0:0:2	2	1	-	40	60	100	3
Total				**22**	**19**	**300**	**220**	**180**	**700**	
8	*MC-902A	Constitution of India	3:0:0	3	-	100	-	0	100	3
*MC-902A is a mandatory credit-less course in which the students will be required to get passing marks in the major test.										

Note: All the students have to undergo 4 to 6 weeks Industrial Training after 4th semester which will be evaluated in 5th semester

Programme Name	Bachelor of Technology (Textile Engineering)	Semester III
Course Title	**Textile Fibers**	
Course Code	**PCC-TEX-217A**	
Purpose	To make students understand textile terms, natural fibers and their properties To make students understand production of man-made fibres and their properties.	
Course Outcomes	After completing this course student will be able to: **CO1**. define textile terms **CO2**. explain classification of textile fibres **CO3**. enumerate essential and desirable properties (physical and chemical) of textile fibres **CO4**. familiar with natural and man-made fibres used in textile field **CO5**. use the relevant fibres for suitable applications in textile industry	
Prerequisite	Knowledge of basic Physics, Chemistry and Mathematics	

PCC-TEX-217A
TEXTILE FIBRES

LT P
3 0 0

Sessional: 25 Marks
Exam: 75 Marks
Total: 100 Marks
Time: 3 Hrs

Note:
Examiner will set nine questions in all. Question no. 1 will be objective type covering all the four units. Eight more questions will be set with two questions from each unit. The students will be required to attempt five questions in total; Question no. 1 compulsorily and one question from each unit.

UNIT-I
General definitions and important terminologies related to textiles; Classification of fibres; Essential and desirable properties of textile fibres and their role in final end-products; Comparison of natural and manmade fibres;

Cotton: Geographical distribution; structure and properties (physical and chemical) of cotton fibres; Different varieties including organic as well as Bt cotton and their properties and applications.

UNIT-II
Geographical distribution, extraction, properties and uses of Bast and leaf fibres such as Jute, Hemp, Sisal and Ramie etc.

Varieties of natural silk, rearing of silk worm, properties and uses of various types of silk; silk degumming, reeling, throwing and weighing.

UNIT-III
Varieties, sorting and grading of wool, physical and chemical properties of wool, processes involved in the removal of impurities from raw wool, numbering systems of woollen and worsted yarns.

Basic concept of polymer, essential properties of fibre forming polymers, General principles of manufacturing of man-made fibres.

UNIT-IV
Brief outline of the manufacturing processes of important man-made fibres, viz. rayons (Viscose and Acetate), polynosic, tencel, nylons, polyester, acrylics, polypropylene, polyolefins, polyacrylonitrile and some technical speciality fibres like aramid, spandex/lycra etc (only flow charts); their Important physical and chemical properties and applications

Suggested Text Books & References

1)Kozłowski, R.M., "Handbook of Natural Fibre", 1st Edition, Woodhead Publication, 2012.
2)Lewin M., "Handbook of Fiber Science and Technology (International Fiber Science and Technology)", CRC Press.
4)Gupta V. B. and Kothari V. K., "Manufactured Fiber Technology", Chapman & Hall, London, 1997.
5)Kothari V.K., "Textile Fibers: Developments and Innovations", IAFL Publication, 2000.
6)Simpson W S., Crawshaw G., "Wool: Science and Technology", Woodhead Textile Series, 2002.
7)Mishra S.P., "A text Book of Fiber Science and Technology", New Age International (P) Ltd.
8)Moorthy H.V.S, "Introduction to Textile Fibers", Woodhead Textile Series, 2015.
9)Ghoel E.P.G., Valensky. "Textile Science", CBS Publishers & Distributors, 2nd Edn Reprint- (2005).
10)Bernard P C., "Textile Fiber to Fabric", McGraw Hill Book Co.
11)Morton W.E &Hearle J.W.S., "Physical Properties of Textile Fibers", Textile Institute, U.K.
12)Kothari V.K., "Progress in Textiles: Science & Technology" Vol-2, IAFL Publication New Delhi.
13)Cook G., "Hand Book of Textile Fibers", Vol-1&2, Woodhead Publication.
14)Eichhorn S., Hearle J.W.S., Jaffe M., Kikutani T., "Handbook of Textile Fibre Structure", Vol. I., Wood Head Publication, 2009.
15)https://nptel.ac.in/courses/116102026/24 (21st May, 2019).

HSMC–TEX–216A Entrepreneurial and Industrial Engineering

Programme Name	**Bachelor of Technology (Textile Engineering)**	**Semester IV**
Course Title	**Entrepreneurial and Industrial Engineering**	
Course code	**HSMC–TEX–216A**	
Purpose	1. To acquaint the students with principles of management, Entrepreneurship and Entrepreneurial Skills; 2. To make the students understand the concepts of Industrial Engineering	
Course Outcomes	After completing this course, the students will be able to: **CO1**. take the right decision to optimize resource utilization by improving productivity of Materials, Machines, Money, Methods, Manpower and Management effectively; **CO2**. find alternative best productive methods reducing time, improving human efficiency and minimizing waste; **CO3**. understand the functions and applications of Industrial Engineering	
Prerequisite	Basic concepts of Social Sciences	

HSMC–TEX–216A

Entrepreneurial and Industrial Engineering

L T P
3 1 0

Sessional: 25 Marks
Exam: 75 Marks
Total: 100 Marks
Time: 3 Hrs

Note: *Examiner will set nine questions in total. Question one having objective type questions will be compulsory covering all the units. The remaining eight questions of 15 marks each will be set by taking two questions from each unit. The students will have to attempt five questions in total, first being compulsory and selecting one from each Unit.*

UNIT I

Entrepreneurship: Meaning and concept, role of entrepreneurship in economic development & new economic reforms, Entrepreneurial Skills, decision process, Factors influencing entrepreneurship; Business Opportunity Identification; Preparing a Business Plan and project reports, Significance, components and feasibility studies of business plans/project reports, Importance of new venture financing, sources of financing

UNIT II

Industrial Parks (Meaning, features with examples); Special Economic Zone (Meaning, features with examples); Financial institutions and agencies, MSME, Small Scale Industries, Introduction to SIDBI, IDBI, IFCI and various Government agencies like NABARD etc, Carry on Business (COB) license, Environmental Clearance, Introduction to various industrial hazards like fire, mechanical and electrical etc, Introduction to safety rules for prevention of accidents, National

Small Industries Corporation Rules and regulations for exemption from income tax, excise clearance etc., Claiming of draw back in export business.

UNIT III

Productivity – importance, concepts and measurements, Work study, Method study, micro -motion study, Production planning and control- Importance of planning - job, batch and mass production- Introduction and need for a new product, Functions of production control at macro and micro levels - Routing, Scheduling, dispatching and follow up etc. Ergonomics and its importance

UNIT IV

Introduction to Industrial Engineering - Evolution of modern Concepts in Industrial Engineering - Functions of Industrial Engineering, application of Industrial Engineering. Facility location factors and evaluation of alternate locations, Types of plant layout and their evaluation, Assembly line balancing, Materials handling systems, Inventory Control, inventory control techniques. Job evaluation, merit rating, incentive schemes, and wage administration, Quality control and Inspection.

Suggested Text Books & References

1) Cliffon, Davis S & Fyfie, David E, "Project Feasibility Analysis" Wiley, 1977
2) A N Desai, "Environment & Entrepreneur" APH Publishing Corporation, 2009
3) P F Drucker, "Planning a Small-Scale Industry: A Guide to Entrepreneurs" HarperCollins, 2006
4) R Jain, "Developing Entrepreneurship-A Handbook Learning System", Learning Systems, 1978
5) Pareek, Udai and Venkateswara Rao, "Motion and Time study," Oxford and IBH Publishing, 2015
6) Ralph M Barnes, "Engineered work Measurement" Wiley India Pvt. Limited, 2009
7) Weldon, ELBS, Marvin E Mundel, Work Study and Ergonomics
8) ILO Ralph & Barnes, Work Study

S Dalela and Sourabh, Introduction to Work Study