13. Courses of Study and Scheme of Assessment

BTECH TEXTILE TECHNOLOGY

(2015 REGULATIONS)
(Minimum credits to be earned: 185)

		Hours / week				Maximum marks			
Code No.	**Course**	**Lecture**	**Tutorial**	**Practical**	**Credits**	**CA**	**FE**	**Total**	**CAT**
SEMESTER I									
15T101	Calculus and its Applications	3	2	0	4	50	50	100	BS
15T102	Physics	3	0	0	3	50	50	100	BS
15T103	Chemistry	3	0	0	3	50	50	100	BS
15T104	English Language Proficiency	2	2	0	3	50	50	100	HS
15T105	Problem Solving and C Programming	2	2	0	3	50	50	100	ES
15T106	Basics of Textile Engineering	2	2	0	3	50	50	100	PC
15T110	Engineering Practices	0	0	2	1	100	-	100	ES
15T111	Physics Laboratory I	0	0	2	1	100	-	100	BS
15T112	Chemistry Laboratory I	0	0	2	1	100	-	100	BS
15T214	Personality and Character Development	0	0		Refer sem 2 and footnote				MC
	Total 29 hrs	**15**	**8**	**6**	**22**	**600**	**300**	**900**	
SEMESTER II									
15T201	Complex Variables and Transforms	3	2	0	4	50	50	100	BS
15T202	Basics of Electrical and Electronics Engineering	3	0	0	3	50	50	100	ES
15T203	Applied Mechanics	3	2	0	4	50	50	100	ES
15T204	Material Science	3	0	0	3	50	50	100	BS
15T205	Applied Chemistry	3	0	0	3	50	50	100	BS
15T___	Language Elective	3	0	0	3	50	50	100	HS
15T210	Engineering Graphics	0	0	4	2	100	-	100	ES
15T211	Physics Laboratory II	0	0	2	1	100	-	100	BS
15T212	Chemistry Laboratory II	0	0	2	1	100	-	100	BS
15T214	Personality and Character Development	0	0	**	Grade	-	-	-	MC
	Total 30 hrs	**18**	**4**	**8**	**24**	**600**	**300**	**900**	

** - Total 40 hrs in semesters I & II put together.
Grade: Completed / Not Completed.

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Code No.	Course	Hours / week				Maximum marks			
		Lecture	Tutorial	Practical	Credits	CA	FE	Total	CAT
SEMESTER II – Summer Term€									
15T215	Professional Skills	6	0	9	2	100	-	100	EEC
15T216	In-Plant training and Technical Seminar	6	0	9	2	100	-	100	EEC
	Total 30 hrs	**12**	**0**	**18**	**4**	**200**		**200**	

CA - Continuous Assessment
FE - Final Examination
€ - These courses will be conducted prior to the commencement of the third semester for a period of 4 weeks during summer term.

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Code No.	Course	Hours / week				Maximum marks			
		Lecture	Tutorial	Practical	Credits	CA	FE	Total	CAT
SEMESTER III									
15T301	Numerical Methods	2	2	0	3	50	50	100	BS
15T302	Theory of Machines	3	2	0	4	50	50	100	ES
15T303	Measurements and Instrumentation	3	2	0	4	50	50	100	ES
15T304	Fibre Physics	3	0	0	3	50	50	100	PC
15T305	Yarn Manufacture I	2	2	0	3	50	50	100	PC
15T070	Economics for Engineers	3	0	0	3	50	50	100	HS
15T310	Electrical and Electronics Engineering Laboratory	0	0	4	2	100	-	100	ES
15T311	Yarn Manufacture Laboratory I	0	0	4	2	100	-	100	PC
	Total 32 hrs	**16**	**8**	**8**	**24**	**500**	**300**	**800**	
SEMESTER IV									
15T401	Probability and Statistics	2	2	0	3	50	50	100	BS
15T402	Technology of Man Made Fibers	3	0	0	3	50	50	100	PC
15T403	Yarn Manufacture II	3	2	0	4	50	50	100	PC
15T404	Fabric Manufacture I	3	0	0	3	50	50	100	PC
15T405	Environmental Science and Engineering	3	0	0	3	50	50	100	HS
15_____	Open Elective I*	3	0	0	3	50	50	100	OE
15T410	Yarn Manufacture Laboratory II	0	0	4	2	100	-	100	PC
15T411	Fabric Manufacture Laboratory I	0	0	4	2	100	-	100	PC
15T420	Innovation Practices	0	0	4	2	100	-	100	EEC
	Total 33 hrs	**17**	**4**	**12**	**25**	**600**	**300**	**900**	

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BTECH TEXTILE TECHNOLOGY (2015 REGULATIONS)

Code No.	Course	Hours / week				Maximum marks			
		Lecture	Tutorial	Practical	Credits	CA	FE	Total	CAT
SEMESTER V									
15T501	Fabric Manufacture II	2	2	0	3	50	50	100	PC
15T502	Knitting Technology	3	0	0	3	50	50	100	PC
15T503	Preparation and Dyeing	3	0	0	3	50	50	100	PC
15T504	Textile Quality Evaluation	3	0	0	3	50	50	100	PC
15T505	Process and Quality Control in Spinning	2	2	0	3	50	50	100	PC
15T____	Open Elective II*	3	0	0	3	50	50	100	OE
15T510	Fabric Manufacture Laboratory II	0	0	4	2	100	-	100	PC
15T511	Preparation and Dyeing Laboratory	0	0	4	2	100	-	100	PC
15T512	Fiber and yarn quality Evaluation Laboratory	0	0	4	2	100	-	100	PC
	Total 32 hrs	**16**	**4**	**12**	**24**	**600**	**300**	**900**	
SEMESTER VI									
15T601	Mechanics of Textile Machines	3	2	0	4	50	50	100	ES
15T602	Printing and Finishing	3	0	0	3	50	50	100	PC
15T603	Technology of Bonded Fabrics	2	2	0	3	50	50	100	PC
15T604	Garment Manufacturing Technology	3	0	0	3	50	50	100	PC
15T___	Professional Elective I	3	0	0	3	50	50	100	PE
15____	Open Elective III*	3	0	0	3	50	50	100	OE
15T610	Printing and Finishing Laboratory	0	0	4	2	100	-	100	PC
15T611	Apparel Design and Manufacturing Laboratory	0	0	4	2	100	-	100	PC
15T612	Fabric Quality Evaluation Laboratory	0	0	2	1	100	-	100	PC
	Total 31 hrs	**17**	**4**	**10**	**24**	**600**	**300**	**900**	

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Code No.	Course	Hours / week				Maximum marks			
		Lecture	Tutorial	Practical	Credits	CA	FE	Total	CAT
SEMESTER VII									
15T701	Fabric Structure	2	2	0	3	50	50	100	PC
15T702	Technical Textiles	3	0	0	3	50	50	100	PC
15T703	Management of Textile and Clothing Industry	2	2	0	3	50	50	100	PC
15T___	Professional Elective II	3	0	0	3	50	50	100	PE
15T___	Professional Elective III	3	0	0	3	50	50	100	PE
15T___	Professional Elective IV	3	0	0	3	50	50	100	PE
15T710	Fabric Structure and Design Laboratory	0	0	4	2	100	-	100	PC
15T711	Textile Product Engineering and Development Laboratory	0	0	2	1	100	-	100	PC
15T712	Industrial Training	0	0	2	1	100	-	100	EEC
15T720	Project Work I	0	0	4	2	100	-	100	EEC
	Total 32 hrs	**16**	**4**	**12**	**24**	**700**	**300**	**1000**	
SEMESTER VIII									
15T___	Professional Elective V	3	0	0	3	50	50	100	PE
15T___	Professional Elective VI	3	0	0	3	50	50	100	PE
15T820	Project Work II	0	0	16	8	50	50	100	EEC
	Total 22 hrs	**6**	**0**	**16**	**14**	**150**	**150**	**300**	

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LANGUAGE ELECTIVES

15T080	Communication Skills for Engineers
15T081	Basic German
15T082	Basic French
15T083	Basic Japanese

OPEN ELECTIVES

(Students can opt for all open electives from single stream or several streams)

MATHEMATICS

15OH01	Advanced Linear Algebra
15OH02	Algebraic Structures
15OH03	Calculus of Variations and Tensor Analysis
15OH04	Graph Theory and its Applications
15OH05	Mathematical Finance
15OH06	Mathematical Modeling and Simulation
15OH07	Number Theory for Computing
15OH08	Operations Research
15OH09	Reliability and Quality Control
15OH10	Soft Computing
15OH11	Stochastic Models

PHYSICS

15OH20	Analytical Techniques for Materials Characterization
15OH21	Laser Technology
15OH22	Micro Electromechanical Systems
15OH23	Nanomaterials and Applications
15OH24	Physics for Solar PV Systems and Solid-State Lighting Systems
15OH25	Sensors for Engineering Applications
15OH26	Thin Film Technology
15OH27	Nonlinear Science and Engineering Applications
15OH28	Nonlinear Fiber Optics
15OH29	Chaotronics

CHEMISTRY

15OH34	Chemistry of Nanomaterials
15OH38	Fiber Chemistry
15OH40	Polymer Chemistry and Technology

COMPUTER APPLICATIONS

15OH46	Computer Graphics and Virtual Reality
15OH47	Data and File Structures
15OH48	Database Management System
15OH49	High Performance Computing
15OH50	Mainframe Systems
15OH51	Mobile Application Development
15OH52	Multicore Programming
15OH53	Object Oriented Programming
15OH54	Programming in Python
15OH55	Responsive Web Design
15OH56	Social Web Mining
15OH57	Software Engineering
15OH58	Java Programming
15OH59	Geographic Information System
15OH60	Programming for Robotics

HUMANITIES

15OH61	An Introduction to Indian Constitution
15OH62	Entrepreneurship
15OH63	Human Resource Management
15OH64	Industrial Psychology
15OH65	Principles of Management
15OH66	Business Statistics
15OH67	Disaster Management
15OH68	Financial and Managerial Accounting
15OH69	Marketing Management
15OH70	Defence Practices and Disaster Management

ENGLISH

15OH75	English and Soft Skills for Employability
15OH76	English for Competitive Examinations
15OH77	German Language – International Level A1.1
15OH78	German Language – International Level A1.2

APPLIED MATHEMATICS AND COMPUTATIONAL SCIENCES

15OH81	Data Structures and Algorithms
15OH82	Optimization Techniques
15OH83	Data Science
15OH84	Data Visualization
15OH85	Artificial Intelligence
15OH86	Pervasive Computing
15OH87	Parallel and Distributed Computing
15OH88	Cyber Security
15OH89	Randomized Algorithms
15OH90	Approximation Algorithms
15OH91	Network Science
15OH92	Applied Stochastic Processes
15OH93	Modelling and Simulation
15OH94	Graph Algorithms

OPEN ELECTIVES OFFERED BY ENGINEERING DEPARTMENTS

15AH02	Off Highway Vehicles	(Department of Automobile Engineering)
15MH03	Industrial Engineering and Management	(Department of Mechanical Engineering)
15MH05	Six Sigma Project Methodology	(Department of Mechanical Engineering)
15PH08	Foundation Skills in Integrated Product Development	(Department of Production Engineering)

PROFESSIONAL ELECTIVES

FIBRES

15T001	High Performance Fibres
15T002	Advances in Manufactured Fibres
15T003	Analytical Characterization of Textiles

YARN AND FABRIC ENGINEERING

15T004	Long Staple Spinning
15T005	Structural Mechanics of Textile Materials
15T006	Advanced Fabric Structure and Design
15T007	Specialty Textiles
15T008	Textile Composites
15T009	Specialty Knits
15T010	Coated Textiles
15T011	Automotive Textiles
15T012	Protective Textiles
15T013	Filtration Textiles
15T014	Clothing Science
15T015	Process and Quality Control in Weaving

CHEMICAL PROCESSING

15T016	Process and Quality Control in Chemical Processing
15T017	Functional Finishes
15T018	Green Processing of Textiles
15T019	Colour Science, Measurement and Applications
15T020	Theory of Colouration

TEXTILE MACHINERY DESIGN

15T021	Design Concepts of Textile Machinery
15T022	Computer Applications in Textiles
15T023	Knitting Mechanics

15T024	Textile Machinery Maintenance
15T025	Textile Machine Drawing

APPAREL TECHNOLOGY

15T026	Apparel Marketing and Merchandising
15T027	Apparel Quality Evaluation and Standards
15T028	Apparel Production Planning and Control
15T029	Apparel Product Engineering

TEXTILE MANAGEMENT

15T030	Total Quality Management
15T031	Industrial Engineering
15T032	Energy Management in Textile Industry
15T033	Textile Costing and Cost Control
15T034	Financial Management
15T035	Joining Textiles
15T036	Characterization of Industrial Textiles
15T037	Bonded Fabric Structure and Mechanics
15T038	Acoustic Textile Products and Characterization
15T039	Ergonomics in Textile and Garment Industry

ONE CREDIT COURSES

OFFERED BY THE DEPARTMENT

15TF01	Quality Management in Spinning
15TF02	Quality Control in Weaving
15TF03	Quality Testing of Coloured Textiles
15TF04	Decorative Printing
15TF05	Apparel Merchandising
15TF06	Industrial Engineering
15TF07	Textile and Apparel Costing
15TF08	Enterprise Resource Planning in Textile & Garment Industry
15TF09	Coated and laminated fabrics and products
15TF10	Warp Knit Fabrics and Applications
15TF11	Value Engineering for Textile and Apparel Industry
15TF12	Lean Manufacturing for Textile and Apparel Industry
15TF13	Six Sigma for Textile and Apparel Industry
15TF14	Business Acumen
15TF15	Accessories and Allied Machinery Requirements of a Spinning Mill
15TF16	Erection and Commissioning of Textile Machinery
15TF17	Denim Processing
15TF18	Chemical Processing of Textiles
15TF19	Acoustic Textile Products and their Characterization
15TF20	Needle Punched Nonwovens and their Characterization
15TF21	3D Woven Fabrics
15TF22	3D Knitted Fabrics
15TF23	Digital Printing

OFFERED BY HUMANITIES

15OF01	Export – Import Management
15OF02	Insurance & Risk Management
15OF03	Values and Ethics at Work Place
15OF04	Development of Industrialisation
15OF05	Creativity and Social Enterprise
15OF06	Social and Psychological Well Being
15OF13	Security Analysis and Portfolio Management
15OF14	Implementation of Quality Management System
15OF15	Financial Management
15OF16	Personality Development Through Transactional Analysis

OFFERED BY THE DEPARTMENT OF ENGLISH

15OF10	Corporate Communication
15OF11	Interpersonal and Organizational Communication
15OF12	Human Values Through Literature

OFFERED BY THE DEPARTMENT OF MATHEMATICS

15OF21 Principles of Business Analytics

SUMMARY OF CREDIT DISTRIBUTION

B.TECH. TEXTILE TECHNOLOGY												
S. No	**Course Work subject Area**	**Credits Per Semester**								**Total Credit**	**Credit Range**	
		I	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VIII**		Min	Max
1	**HS**	3	3	3	3	0	0	0	0	12	9	18
2	**BS**	12	12	3	3	0	0	0	0	30	27	36
3	**ES**	4	9	10	0	0	4	0	0	27	27	36
4	**PC**	3	0	8	14	21	14	12	0	72	54	72
5	**PE**	0	0	0	0	0	3	9	6	18	18	27
6	**OE**	0	0	0	3	3	3	0	0	9	9	18
7	**EEC**	0	0 + 4*	0	2	0	0	3	8	17	18	27
	Total	**22**	**24+4***	**24**	**25**	**24**	**24**	**24**	**14**	**185**	**175**	**185**

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