



சாந்தார் வல்லயாய் படேல் சாந்வநேசு ஜவஹரி மற்றும் மேலான்தம கல்லூரி  
சர்வதை வல்லம்பாரீ படேல் இந்திரநேசனல் ஸ்கூல் ஓஃப் டெக்ஸ்டாஇல்ஸ் எஃ மைனேஜ்மென்ட்

**SARDAR VALLABHBHAI PATEL  
International School of Textiles & Management**

Autonomous Institute, Ministry of Textiles, Government of India.

Approved by AICTE, NAAC Accredited

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## **B.Sc. – TEXTILES**

### **REGULATIONS, CURRICULUM & SYLLABUS**

## **ABOUT SVPISTM**

SVPISTM is a one of its kind institute which is primarily devoted for Textile Management excellence. To cater to the needs of students' community it offers UG and PG programmes in Textiles and Management. With more than 15 years of heritage, SVPISTM has carved a niche in the field of Textile and Management education. Our methodology for producing industry ready candidates and entrepreneurs is based on experiential learning through practical workshops, real-time projects, working alongside with industry professionals as mentors.

This institute is an autonomous entity governed by the Ministry of Textiles, Government of India. All the academic programmes are offered in collaboration with the Central University of Tamil Nadu (CUTN). The core culture and philosophy of SVPISTM is to keep students at the forefront of modern textile and management practices through innovative pedagogy blending theoretical knowledge with practical application to succeed in the global business world.

In the rapidly changing economic and business landscape, need for managers with the global perspective and personal competencies to drive diverse teams has become even more important for organizations. We continually strive on best approach to empower the students to harness their potential strengths and to emerge as positive, well-informed, ethical and confident individuals.

Right from inception we have been training executives, preparing the participants for a world in constant evolution, a world that needs leaders capable of utilizing innovation to turn challenges into opportunities. At SVPISTM, innovation is the way of life.

## **VISION & MISSION**

### **Vision**

To emerge as an internationally renowned center of excellence in textile education, creating a strong cadre of professionals who will become inspiring performers and decision makers, capable of attaining high standards and competitive edge to bring the Indian textile industry to the forefront

### **Mission**

Our Mission is to impart vibrant, comprehensive and innovative learning to our students enabling them to be managers, entrepreneurs, and leaders with strong cultural values and to provide an ambience to develop their skills to meet the challenges of the global business environment.

## **I. GOVERNANCE POLICIES**

### **1. STUDENT BEHAVIOUR IN THE CAMPUS**

- a. Discipline includes the observance of good conduct and orderly behavior by the students of the Institute.
- b. The following and such other rules as framed by the Institute from time to time shall be strictly observed by the students of the Institute.
  - ✓ Every student of the Institute shall maintain discipline and consider it his /her duty to behave decently at all places. Men student shall, in particular, show due courtesy and regard to women students.
  - ✓ No student shall visit places or areas declared by the Institute as “Out of Bounds” for the students.
  - ✓ Every student shall always carry on his / her personal Identity Card issued by the Institute.
  - ✓ Every student, who has been issued the Identity Card, shall have to produce or surrender the Identity Card, as and when required by the Institute Staff, Teaching and Library Staff and the Officials of the Institute.
  - ✓ Any Student found guilty of impersonation or of giving a false name shall be liable to meet disciplinary action.
  - ✓ The loss of the Identity Card, whenever it occurs, shall immediately be reported in writing to the class advisor.
  - ✓ If a student is found to be continuously absent from classes without information for a period of 15 days in one or more classes, his / her name shall be struck off the rolls. He/she may, however, be readmitted within the next fortnight on payment of the prescribed readmission fee etc. He / She will not be readmitted beyond the prescribed period.

c. Breach of discipline, interlaid, shall include:

- ✓ Irregularity in attendance, persistent idleness or negligence or indifference towards the work assigned.
- ✓ Causing disturbance to a Class or the Office or the Library, the auditorium and the play Ground etc.
- ✓ Disobeying the instructions of teachers or the authorities;
- ✓ Misconduct or misbehavior of any nature at the Examination Centre.
- ✓ Misconduct or misbehavior of any nature towards a teacher or any employee of the Institute or any visitor to the Institute.
- ✓ Causing damage, spoiling or disfiguring to the property/equipment of the Institute;
- ✓ Inciting others to do any of the aforesaid acts;
- ✓ Giving publicity to misleading accounts or rumor amongst the students;
- ✓ Mischief, misbehavior and/or nuisance committed by the residents of the hostels;
- ✓ Visiting places or areas declared by the Institute as out of bounds for the students.
- ✓ Not carrying the identity cards issued by the Institute;
- ✓ Refusing to produce or surrender the Identity Card as and when required by Teaching and other Staff of the Institute;
- ✓ Any act of ragging.
- ✓ Any other conduct anywhere which is considered to be unbecoming of a student.
- ✓ Possession and/or use of any prohibited items and substances like tobacco, alcohol, narcotics, etc., is banned inside the campus premises

d. Students found guilty of breach of discipline shall be liable to such punishment, as prescribed below:

- ✓ Fine
- ✓ Campus Ban
- ✓ Expulsion
- ✓ Rustication

e. No such punishment shall be imposed on an erring student unless he is given a fair chance to defend himself. This shall not preclude the Director from suspending an erring student during the pendency of disciplinary proceedings against him relating to discipline & disciplinary action in relation to the student shall vest in the Director. However the Director may delegate all or any of his / her powers as he deems proper to the program coordinator or to the disciplinary authority as the case may be any functionary of the Institute.

f. The said Committee, shall, make such Rules as it deems fit for the performance of its functions and these Rules and any other orders under them shall be binding on all the students of the Institute.

g. The decision of the Discipline Committee shall be final and binding. However, in exceptional circumstances the Discipline Committee is empowered to review its decisions.

## **2. DRESS CODE**

Male students shall wear formal dress of pants and tucked-in shirts with shoes. The female students shall wear full Saree / Salwar Kameez. All students are expected to come in formal dress on important occasions. On any occasion students will not be allowed to attend the classes in T-shirts.

## **3. LIBRARY**

The library is stacked with latest books and reference materials. The library has been provided with the ERP Software having a multi-functional facility. The library holds over 8,000 volumes of books and rich collection of journals. In addition the library possesses audio-visual and multimedia documents. Apart from this, it also provides online sources and reprographic facilities. The library subscribes to online data bases to enhance the knowledge base of students. The time, rules and regulations of library are given below.

### **a. Library Timings**

- ✓ Monday to Friday – 9.00 am to 5.30 pm
- ✓ Saturday (Excluding second & last Saturday of month) – 9.00 am to 4.30 pm

### **b. Rules and Regulations**

- ✓ Students should register their entry and exit to access the Library.
- ✓ Books, bags, and other belongings are not allowed inside the Library.
- ✓ Students are allowed to take maximum of three books for a period of fourteen days. They may be allowed for further renewal if there is no demand for that particular book. If the books are not returned within the due date, Rupee one will be charged per day per book till the return of the books.
- ✓ Reservation facility is available on issued books.
- ✓ Books will be issued upto 5.30 pm on all the working days except Saturdays.
- ✓ ID card should be produced at the time of issuing books.
- ✓ Issue of books through the ID card of other students is strictly prohibited.
- ✓ Loss of book is to be replaced by the same copy or by double the cost of the book.
- ✓ Silence to be maintained inside the library. Group activity to be avoided inside library.
- ✓ Stealing, damaging the property of the library, misbehaviour with any-one in the library will be considered an act of indiscipline and misconduct. The student involved may be denied library membership and reported for further action on account of their misconduct.
- ✓ Any book issued must be shown for verification to the person on duty at the library gate.
- ✓ Marking, defacing or damaging any library property is a gross misconduct.

### **c. Library Facilities**

The SVPISTM Library provides the following facilities to the users.

- ✓ WEB OPAC facility to access library books and journals.
- ✓ Online Journals.
- ✓ Online News Papers.
- ✓ e-Books.
- ✓ Reprography facility is available inside the campus on cost basis.

### **d. Lending Rules**

- ✓ Reference book, journals or magazines, summer training reports or dissertation reports (including back issues) will not be issued to students. They are to be used only in the Library.
- ✓ The Librarian reserves the right to recall any book issued to the borrower even prior to the due date of return, if necessary.
- ✓ Maximum of three books will be issued to the students for the period of fourteen days.
- ✓ Maximum of five books will be issued to the faculty members for the period of sixty days.
- ✓ If a student fails to return the book on due date or fails to get it re-issued on the due date, a fine of Rupee One per day per book will be charged for each book after the due date.

## **4. COMPUTER LAB**

The institute campus is equipped with networked computers and other IT equipment. Internet browsing with broadband facility is available other than class hours during college working time. Facilities like printing & scanning are also extended to students.

### **a. IT Guidelines**

#### **I. The Institute and its IT resources**

The Institute makes Information Technology services available to the students in varied forms:

- ✓ The Institute network comprises of secured network with the latest Hardware, Firewall & Antivirus software.
- ✓ The Institute network comprises DNS Server, ERP Server, and Online e-Learning software with the latest Processor with desktop computers setup.
- ✓ The Institute has centralized computing facility. Audio visual equipment is available in the classroom and in the seminar hall.
- ✓ Access to High-speed internet is available in all the computers except the computers in the class rooms. In addition to this National Knowledge Network Connectivity from BSNL is also available for students.
- ✓ Reprographic facility is made available inside the campus for the students as well as for the faculty members.
- ✓ Scanning facility is available in the Computer Laboratory, Library, Controller's office (Multi-function Device) and Academic section.

- ✓ The computers assigned to the group / department may be utilized effectively by the group on time-share basis.
- ✓ The Faculty, Staff and students are provided with individual user-IDs in the Institution domain server through which they can interact among themselves. Moreover, we have separate individual email-IDs to our faculty and staff for official purpose through the web mail.
- ✓ The group or individual or department are being assigned with the computers or workstations, which means that the individual / department are responsible for the machine's safety. However the IT department may provide suggestions to keep it safe and in working condition.
- ✓ In case of any requirement, the group / department should provide information about the usage of the computing equipment.
- ✓ The Institute owns Software licenses for various System Software as well as Application software.
- ✓ The Secured Wi-Fi Connectivity is available in the campus as well as in the hostels.

## **II. DOs and DON'Ts for using the resources**

- ✓ Students must wear a valid ID card before entering the Computer Lab
- ✓ While entering the computer laboratory, students must make an entry in the register book kept in the computer laboratory and also at the time of exit from the lab. Students are expected to maintain perfect silence and good discipline.
- ✓ Students are not allowed to bring in bags, pouches, food and beverages inside the Lab
- ✓ Mobile phone should be in switched off mode.
- ✓ Before leaving lab, students must shutdown the system, keep the place clean and rearrange the chairs in appropriate place.
- ✓ During the class hours students are not allowed to use the computer lab. If necessary, they can get permission from the concerned class faculty, Program coordinator and Lab in charge. They should submit the lab access form to the lab in charge, unless they will not be allowed to enter into the lab.
- ✓ You can back up your data regularly in the additional drives available in the local machine itself.
- ✓ Use of any media (CD / DVD / Pen Drive) or transfer of files from digital camera or any storage media to the network storage is subject to permission from the network administrator. Usage of pen drive is allowed only after scanning for virus.
- ✓ No user is allowed to login a computer as administrator. He / She is only an ordinary user with assigned individual / group user – id.
- ✓ Inform and seek permission from the IT department (recommended procedure) while transferring / shifting devices (such as desktop computers, laptops) from one place to other inside the campus for any task.
- ✓ In case of any requirement in taking laptops / projectors or any devices outside the campus, acquire a gate pass from the administrative office.
- ✓ Do not try getting data of others from the computer or the network.
- ✓ Taking a photograph using any media in the laboratory is prohibited.

- ✓ Do not login with the login-id of others or do not lend your login id and password to others. Any data loss thereby may not be retrieved.
- ✓ The students have to send a request to the library for any hard copy print by listing the file, location and page numbers of the content for print and collect only during the break hours. Users have to enter in the log book and collect the print out. This procedure applies to copying / writing data in CDs also.
- ✓ Students can use their personal computers in the campus. But they are not permitted to connect to the LAN. Use of software without license in the laptop and accessing the internet through institute network is strictly prohibited. Software piracy will not be entertained.
- ✓ Students are advised to maintain cleanliness inside the laboratory. Use of mobile phones, hearing songs and eatables are not allowed inside the laboratory (to be strictly followed by all the students in the computer laboratory, failing which the services will be denied.)

### **III. Storage, e-mail / Chat: Privacy, Responsibilities and Rules**

- ✓ IT department has provided every user with a storage space in the network. As network share is available to students of that course, it is a common information sharing only and not to store individual / group's personalized data or irrelevant data like movies, songs etc.
- ✓ SVPISM procedures allow IT system administrators to view and monitor any files, including e-mail messages, in the course of diagnosing or resolving system related problems and maintaining information integrity. System administrators, as part of the job, will treat any such information on the systems as confidential. However, if the administrator comes across information that indicates illegal activity / content stored in the storage area, the content will be deleted without any notice and the user's work area will be barred.
- ✓ SVPISM's IT policy prohibits certain other kinds of usages. For example, using computers and the network used by individuals for commercial and individual purposes. Such cases if found will be brought to the attention of higher officials.
- ✓ Use of Messenger / Chat is prohibited inside the campus.
- ✓ Gaming is strictly prohibited. The web sites providing online gaming are not advised to be browsed. Any such activity if reported may block even the related beneficiary sites causing inconvenience to all other users in addition to denial of resources.

### **IV. Web Site Contents**

- ✓ Individual users who are browsing will assume full responsibility for the content in Web pages, and they must abide by all applicable rules and policies of SVPISM.
- ✓ Information about the institute is available in the institute's official website viz. [www.SVPISM.ac.in](http://www.SVPISM.ac.in) and [www.SVPISM.ac.in](http://www.SVPISM.ac.in)
- ✓ Any information to be uploaded in the website may be provided to the IT department with the approval from the Director's office.

#### **b. Abuse and Action for Abuse of Computing Privileges**

## **ABUSE**

1. Unauthorized use or misuse of IT department property or records includes
  - a. Electronic data mishandling.
  - b. Willfully or negligently damaging or defacing records in common share or storage areas of individual courses.
  - c. Theft or unauthorized removal of records, property or other person's property.
  - d. Use of unrecognized / unauthorized storage media.
  - e. Any other abuse as found / amended from time to time.
2. Unfortunately computer abuse, malicious behaviour and unauthorized account access do happen. If they are found, it should be reported immediately.

## **ACTION**

- ✓ Denial of service of SVPISM's computing and communications resources for violation of policy are set by the various disciplinary entities, then communicated to and carried out by IT. In instances of immediate threat to the computing and communication systems, IT takes direct and immediate action to safeguard the resources it is charged to protect.
- ✓ When IT department is notified that a user appears to be abusing computing resources, all of his or her computing privileges may be suspended immediately when such an action is warranted to protect the computing resources and to assure reliable service to the rest of the community.

## **5. HOSTEL REGULATIONS**

### **a. Behaviour and Discipline**

- ✓ A hostel campus should be a place where students can have the best possible conditions for studying and adequate rest. As such due consideration must be accorded to other residents. Noise level must be kept low to allow others the opportunity to study or sleep in comfort. Television, Radio etc. provided in the common room must be switched off after 10:00 pm. These rules are intended to ensure a conducive environment for all residents.
- ✓ Residents shall not create or permit their guests or visitors to create any disturbance or other nuisance in the hostel that will interfere with the well-being of others.
- ✓ Possession and/or use of any prohibited items and substances like tobacco, alcohol, narcotics, etc., is banned inside the campus premises
- ✓ Smoking, chewing and spitting of pan in the hostel premises is strictly prohibited.
- ✓ Ragging in any form is prohibited. Punishments for ragging ranges from expulsion from hostel, debarring from exams to cancellation of admission. Ragging shall be treated as a serious offence and shall be dealt with as per the UGC Regulations.
- ✓ Social gathering in the hostel complex are not permitted without the prior and written consent of the warden.
- ✓ Hostel residents are not allowed to entertain unauthorized person(s). Anyone found in violation to this will be fined and penalized according to Institute rule.

- ✓ Resident students found in act of violence or misconduct outside the hostel premises is not the liability of the Warden or Institute administration. In such cases the resident student is responsible for himself/herself.

**b. Upkeep of the Hostel**

- ✓ Residents are responsible for keeping the hostel premises clean. Residents are advised to keep their room, the mess hall, common room, visitor's room, stair case and toilets and bathrooms clean at all time.
- ✓ All water taps, fans and electrical appliances must be turned / switched off when not in use.
- ✓ Noise level must be kept low to allow others the opportunity to study or sleep in comfort. Television, provided in the common room must be switched off or volume toned down after 10:00 pm. These rules are intended to ensure a conducive environment for all residents.
- ✓ The use of electrical appliances such as immersion heaters, electric stove/heater are forbidden in any of the room allotted for residence. Cooking, making tea etc is strictly prohibited in the room.
- ✓ Students shall conduct a room check to verify the inventory provided and endorse on the Check In/Check out Form. Any missing or damaged items must be reported to the hostel authority immediately. Otherwise, it will be assumed that all furnishings and fittings are in good order. The student will be responsible for any loss or damage thereafter.
- ✓ Resident(s) should not move any hostel property (table, chair, fan, cupboard, etc.) from one room to another. Any damage to hostel property must be reported immediately to the hostel authority/warden. Resident(s) will be charged for any damages except damages caused by normal wear and tear or faulty products/repairs.
- ✓ Residents will be personally responsible for the safety of their belongings. Residents are advised to keep their personal belongings and any other valuable items locked in their personal locker even when they are out for a short period. Any loss or theft of item(s) should be immediately reported to the hostel authority.
- ✓ Pasting of posters, writings, slogans and any kind of defacing the hostel in any form is not allowed.
- ✓ Electrician, contractors or any other service person may enter rooms as and when necessary in the course of their duty under the directive and permission from the warden only.
- ✓ The Hostel authority reserves the right to enter and inspect a hostel in the interests of health, safety and proper conduct of the students.
- ✓ Entry may also be made without prior notice, during normal hours, for the purpose of conducting non-emergency inspections. For repairs and maintenance purposes of showing the premises, students will be notified in advance by the hostel authority.

**c. Entry and Timings**

- ✓ It is required that residents of the hostel produce their Institute Identity card at the entrance of the hostel whenever he/she enters the hostel premises.
- ✓ Entry into the hostel is allowed till 7.00pm. Any late entries/night exits should be informed to the Warden in advance and permission to be obtained.
- ✓ Resident who wish to stay out of hostel should duly inform the authority about the same.
- ✓ If any student is absent/does not return to the hostel after 24 hours without any information of his/her whereabouts, roommate(s) or fellow residents should inform the hostel authority immediately.

**d. Visitors and Guests**

- ✓ All visitors to the hostel including the parents/guardian will have to make necessary entries in the visitor's book available at the hostel entrance.
- ✓ Visitors are restricted to the visitors lobby only.
- ✓ No visitors will be allowed inside the hostel premises after 7.00 pm.
- ✓ The visit of male guest(s) into female residence and vice versa is prohibited.

**e. Allotment & Vacating of Hostel Accommodation**

A limited hostel accommodation is available. It will be allotted on the basis of “**First come First Serve**” on full payment of one semester mess bill and hostel fees.

**The criteria for allotment of hostel accommodation by the Institute are as under:**

- i. **First Priority:** Students admitted to a full-time Programme of study and are from outside the state of Tamil Nadu.
- ii. **Second Priority:** Students admitted to a full-time Programme of study and are from outside the Coimbatore district.
- iii. **Third Priority:** Students from within the district of Coimbatore but living outside the Town agglomeration of Coimbatore.
- iv. **Fourth Priority:** All others.
  - ✓ Accommodation in the hostel is allowed initially for the current semester and is subsequently renewed subject to the continuing registration and fulfillment of academic requirements by the resident from time to time. All residents should subject themselves to the proof of registration and payment of all hostel dues of the previous semester to be eligible to continue as resident of the hostel.
  - ✓ The Director may allot accommodation to students, in exceptional situations, on case to case basis.
  - ✓ The maximum duration of stay in the hostel is the normal prescribed period of the programmes of studies. Once the resident completed his/her Programme of studies, he/she is no longer a resident and is required to vacate the hostel.
  - ✓ Terminal student must surrender his/her rooms to the concerned warden latest by last day in the case of even semester and last day in the case of odd semester.

- ✓ Resident who discontinues his/her studies from the Institute in the middle of a semester should clear all his/her mess dues and submit an application for vacating the hostel to the Senior Warden. Resident must hand over to the caretaker the complete charge of his /her room with all furniture and fixtures in tact at the time of vacating the room.

**f. Constitution of the Hostel Committee:**

The Hostel Committee shall have the following members:

- ✓ Warden who shall be ex-officio convener
- ✓ A senior member nominated by the Warden in consultation with the Director
- ✓ Two members of institute

**g. Roles and Responsibilities of the Hostel Committee:**

In principle, the Hostel Committee shall discuss and make recommendations regarding:

- ✓ Allotment
- ✓ Discipline of resident students
- ✓ Maintenance and development of the Hostel
- ✓ Matters related to Mess
- ✓ Any other matter pertaining to the Hostel

**h. Hostel facility is available only for girl students.**

**6. ATTENDANCE, DISCIPLINARY & GRIEVANCE COMMITTEE**

- a. This committee is constituted for the smooth functioning of the various activities of the Institute and it consists of the following members :  
 Head of the Department / Academic I/c. - Chairman of the Committee  
 Controller of Examinations - Convenor  
 Class Advisors - Members
- b. The Committee will deliberate the following matters.
  - i. The matters relating to condonation and attendance shortages of students.
  - ii. All grievances and disciplinary problems of the students relating to malpractices in test, semester examinations, etc.
- c. The meeting of the committee will be convened by the Controller of Examination. The Committee will send periodical report and the recommendations to the Director for consideration / ratification / approval.

**7. MENTORSHIP**

To help the students in planning their courses of study and for getting general inputs regarding either the academic programme or any other activity, counselling every student will be assigned to a faculty member who will be the mentor. Student would be allotted for each faculty mentors by the Head – Textiles / Management.

**8. MALPRACTICE IN EXAMINATIONS**

- a. If a student is found copying in a test conducted for Continuous internal assessment, he / she will be given zero marks for that test and severely warned.
- ✓ If a student is found copying in the end semester examination he/she will be debarred from writing that particular paper in that semester. Based on the nature of malpractice, he/she may be debarred for two more attempts of writing that paper/all papers. The disciplinary committee will make recommendations for necessary disciplinary action.
- ✓ During the examinations the candidates shall be under the disciplinary control of the Chief Superintendent of the centre who shall issue the necessary instructions. If a candidate disobeys instructions or misbehaves with any member of the supervisory staff or with any of the invigilators at the Centre, he/she may be expelled from the examination hall for that session.
- ✓ The invigilator shall immediately report the facts of such a case with full details of evidence to the Controller of Examinations who will refer the matter to the Discipline Committee. The Committee will make recommendations for disciplinary action.
  
- b. Every day, before the examination begins, the invigilators shall call upon all the candidates to search their personal things, tables, desks, etc., and ask them to hand over all papers, books, notes or other reference material which they are not allowed to have in their possession or accessible to them in the examination hall. When a late-comer is admitted this warning shall be repeated to him at the time of entrance to the examination hall. They are also to ensure that each candidate has his/her identification card and hall ticket with him/her.
  
- c. **Use of Unfair means:**  
A candidate shall not use unfair means in connection with the examination. The following shall be deemed to be unfair means:
  - ✓ Found in possession of incriminating material related/unrelated to the subject of the examination concerned.
  - ✓ Found copying either from the possessed material or from a neighbor or from any devices.
  - ✓ Inter-changing of answer scripts.
  - ✓ Change of seat for copying.
  - ✓ Trying to help other candidates.
  - ✓ Found consulting neighbor.
  - ✓ Exchange of answer sheets or relevant materials.
  - ✓ Writing register number of some other candidate in the main answer paper.
  - ✓ Insertion of pre-written answer sheets (Main sheets or Additional Sheets).
  - ✓ Threatening the invigilator or insubordinate behavior as reported by the Chief Superintendent and/or Hall Superintendent.
  - ✓ Consulting the invigilator for answering the questions in the examination.
  - ✓ Cases of impersonation.
  - ✓ Mass copying.

**Note:**

- ✓ The Director may declare any other act of omission or commission to be unfair means in respect of any or all the examination.
- ✓ Where the invigilator in charge is satisfied that one third (1/3) or more students were involved in using unfair-means or copying in a particular Examination Hall, it shall be deemed to be a case of mass copying.

**d.**

- ✓ The Hall Superintendent of the examination centre shall report to the Controller of Examinations, without delay and on the day of the occurrence if possible, each case where use of unfair means in the examination is suspected or discovered with full details of the evidence in support thereof and the statement of the candidate concerned, if any, on the forms supplied by the Controller of Examinations for the purpose.
- ✓ A candidate shall not be forced to give a statement by the invigilator. The act of his/her having refused to make a statement shall be recorded by the invigilator and shall be attested by two other members of the supervisory staff on duty at the time of occurrence of the incident.
- ✓ A candidate detected or suspected of using unfair means in the examination may be permitted to answer the question paper, but on separate answer-book. The answer-book in which the use of unfair means is suspected shall be seized by the invigilator, who shall send both the answer-books to the Controller of Examinations with his report. This will not affect the concerned candidate appearing in the rest of the examinations.
- ✓ All cases of use of unfair means shall be reported immediately to the Controller of Examinations by the examiner, paper-setter, evaluator, moderator, tabulator or the person connected with the semester examination as the case may be, with all relevant material.

## **9. INSTITUTE – INDUSTRY INTERACTION**

SVPISTM provides practical industrial training. The students are taken to leading textile manufacturing units, textile research institutions, management institutes and export houses enabling them to get acquainted with the real time processes and the latest developments in the industry. Executives from Industry will deliver lectures and share their experiences on a regular basis with the students.

## **10. PLACEMENT ASSISTANCE CELL**

A separate placement assistance cell is in place which is in constant touch with the leading textile manufacturing units, export units, overseas buying houses etc., and arrange campus recruitment. The placement cell at SVPISTM consists of a faculty coordinator and student coordinators from the programmes B.Sc, BBA and MBA. The placement cell will facilitate in creating opportunities and directions for the registered students towards placements.

### **Rules and Regulations of Placement Cell**

1. All the final year students are required to read the placement rules and regulations, interested students should sign the registration form within two weeks from the commencement of classes for final year.
2. All the students are expected to know about various activities which would be planned from time to time depending on need from the student coordinators
3. Each student has to be a part of their respective mail groups through which they will be informed all details of the placement program.
4. The students will be duly informed through the student's coordinators and notice board about the companies interested in placing students and it is the responsibility of the students to get apprised of the happening of the placement cell.
5. Companies deemed to be fit for conducting campus interview in our institute will make their pre-placement presentation. Any clarification regarding the company may be done before the interview itself.
6. Students should make the decision of attending the interview based on the pre-placement presentations. Also they should come in full formal dress code to attend the same.
7. Till the official information about the selection of the candidates is received from the company, students are allowed to participate in other companies to a maximum of three chances.
8. Once the placement cell receives the official information about the selection, the selected student will not be allowed to attend any other company interview. This is to ensure the policy of "one man – one job" to all the students. However after all students are placed such students will be given option for their future appearance.
9. Following are considered as campus placement.
  - a. Student getting placement through campus placement interview coordinated by placement cell.
  - b. Student getting placed on the basis of their on-going final project in the respective company.
  - c. Any other assistance from the institute.
10. Registration of the student in placement cell is considered to be cancelled due to following reasons.
  - a. Student not interested and not involved in the placement activities.
  - b. Student who is continuously absent / not attending interviews.
  - c. Student who is found by any means that they got the job personally and intentionally trying for better prospects through the institute.
  - d. Any misconduct or indiscipline by students inside the campus.
11. The above mentioned rules are subject to change and it is within the discretion of the placement cell.
12. By registering with the placement cell does not mean it is a guarantee for job.

## **11. CLASS COMMITTEE**

- a. Each programme will have a Class Committee comprising the following members.

- i. Chairman: Head – Management / Textiles
- ii. All the faculty members handling courses for that class as members.
- iii. Two students' representatives with a minimum of 75% attendance during the semester shall be nominated by the class as members.
- b. The functions of the Class Committee will be as follows :
- c. The Class Committee shall meet post all CIA written tests.
- d. The first meeting will be held within two weeks from the date of commencement of classes for the semester.
- e. The class committee shall meaningfully interact and express opinions and suggestions to improve the effectiveness of teaching – learning process and analyse the performance of the students in the class test.
- f. The Class Committee Minutes and the action taken report will be submitted to the Director.

## **12. TEMPORARY BREAK OF STUDY FROM THE PROGRAMME**

A student may be permitted by the Director to withdraw from the programme for a maximum duration of one year, for reasons of medical grounds, physical fitness or other valid reasons subject to the recommendations of the class advisor in consent with the Head – Textiles / Management. In such cases, the student will have to fulfil all conditions to redo the programme.

## **13. WITHDRAWAL FROM EXAMINATION**

- a. A student may for valid reasons and on the recommendation of the class advisor in consent with Head – Textiles / Management, be granted permission to withdraw from appearing for the entire Semester Examination as one unit.
- b. Withdrawal application shall be valid, only if it is made 10 days before the commencement of the semester examination pertaining to the semester.
- c. Such withdrawal shall be permitted only once during the entire programme and shall not be construed as an appearance for the eligibility of a student for the award of classification.
- d. If a student falls sick in the due course of the Semester Examinations, he / she can withdraw from one or more courses.

## **14. PERFORMANCE ANALYSIS COMMITTEE**

The Performance Analysis Committee will consist of Director as Chairman, Controller of Examinations as convenor and the members will be Head – Textiles / Management, all members of faculty and the class advisors. The meeting of the Performance Analysis Committee is to be held within four weeks from the last day of the semester examinations to analyse the performance of the students in all subjects of study (continuous and end semester).

## **15. RESULTS DECLARATION COMMITTEE**

Results Declaration Committee will have Director as Chairman, Head – Textiles / Management and Controller of Examinations as members. After analysing the overall

performance of the students in each course the committee is empowered to declare the results. If necessary, moderation of results will be done by this Committee. The findings and decisions of the performance analysis and results declaration committee is to be passed on to the Controller of Examinations immediately.

## **II. REGULATIONS**

### **Definitions and Nomenclature**

- Institute – Sardar Vallabhbhai Patel International School of Textiles and Management, Coimbatore.
- University / Collaborating University – Central University of Tamil Nadu, Thiruvarur.
- Programme – Bachelor of Science in Textiles
- Course - Every paper / subject of study offered under the programme.
- Curriculum - The various components / courses / labs in each programme that provides appropriate outcomes (knowledge, skills and attitude/behavior) towards the completion and objectives of the programme is called curriculum.
- Credits - Course work is measured in units called credit hours or credits.
- The number of lecture hours allocated for a course per week is the number of credits for that course. In case of practical and labs two hours will account for one credit.

### **1. QUALIFICATION FOR ADMISSION**

- a. Students for admission to the B.Sc. Programme will be required to fulfil the minimum qualification as specified in the following table.

<b>S.No.</b>	<b>Programme</b>	<b>Minimum Qualification</b>
1.	B.Sc. – Textiles	A Pass in Plus two examination or equivalent of any recognized board in India with science stream/vocational stream with textile subjects, having 50% of marks for General and 45% marks for OBC (NCL)/SC/ST/PWD

- b. The Institute will prescribe from time to time other eligibility conditions for admission regarding the marks required to be secured by the student in the qualifying examination, minimum admissible percentage marks therein, permitted number of attempts for obtaining the qualifying examination, passing requirements in the respective entrance tests conducted by this institute for admissions, Common University Entrance Test (CUET) scores or other competitive entrance tests, physical fitness requirements, sponsorship etc.

## 2. DURATION OF THE PROGRAMME

a. The duration of the programmes are as follows:

Programme	Duration	
B.Sc. – Textiles Full-time	6 Semesters	3 Years

The programme is designed with reference to the New Education Policy of Governement of India.

b. Exit options

- a. 6 semesters/3years – towards award of B.Sc Textiles
- c. The duration of each semester will normally be 90 working days.
- d. A Student who is unable to complete the programme within the prescribed duration (6 semesters) may be allowed further to a maximum of 2 academic years after the completion of course duration to complete the programme after which the marks obtained through Continual Internal Assessment (CIA) will be void.

## 3. STRUCTURE OF THE PROGRAMME

- a. This program comprises 49 courses including 24 core courses, 14 laboratory courses, 4 elective courses, 4 Language courses (2 Tamil / 2 Hindi and 2 English) 3 value added courses, 1 self-interest course, 2 internships and 1 project work. The program consist of 142 credit up to 6<sup>th</sup> semester
- b. The student can choose the elective courses from the list specified for concerned semester. Elective courses can be chosen by the student groups who would specialize in that elective unanimously. If the students opting for an elective are not in a position to have a consensus in selection of elective courses, rank order preference method would be adopted for finalizing the courses under electives.
- c. For the project work at sixth semester, student will be permitted by the Programme Co-ordinator to work on an independent project under the supervision of a faculty member from the Institute (Internal Guide) and if required, be under a corporate guide assigned by the organization (External Guide).
- d. The duration of the project will be three days per week during the sixth semester. At the end of the semester the student has to submit the project report.
- e. The first 6 semesters are designed to incorporate core competencies in the stream Textiles and can have an exit option after completion of 6 semesters, which will qualify for the award of degree of B.Sc Textiles, subjected to fulfilling the minimum credit requirement for award of the degree.

## 4. VALUE ADDED COURSES

- a. As an initiative towards developing students as industry ready professionals and competent entrepreneurs, value added courses are introduced in final semester.
- b. The courses are prescribed during the sixth semester based on the inputs from the students, industry experts, feedback from the employers, industry readiness requirements, contemporary practices and trending topics at the time when the course is to be offered.

- c. The courses will be delivered by industry experts / external agencies / practitioners / academic experts in the respective discipline in which the course is designed. They bring the knowhow contemporary industry practices to the college doorstep.
- d. Multiple value added courses would be designed based on the said parameters and would be presented to the students for their choice of selecting two courses. A particular course would be delivered only if 40% of the batch strength opts for that course.
- e. Students shall choose minimum of two courses or more based on their interests and account the credit points.
- f. These value added courses are voluntary basis and credits obtained will be added to the course credit as mentioned under 3 a.
- g. These credits cannot be compensated to the course credit that is mentioned under 3 a.

## **5. SELF-INTEREST COURSES**

- a. Our predominant focus today is to curate the wealth of information that is freely available on the web into high quality learning-outcome to one's interest, learning style and pace of learning.
- b. Self-learning courses based on the students' unique interests through open source learning is introduced among the students to make them gain a competitive advantage in the market.
- c. This flexible learning provides the students a broad spectrum of study.
- d. Each student can undergo one open source course through MOOC, SWAYAM, NPTEL etc., in sixth semester based on their interest which is related to the programme of study.
- e. These courses shall account to one credit on successful completion of the course as prescribed by the organizer. The credits such obtained will be added to the course credit as mentioned under 3 a.
- f. These credits cannot be compensated to the course credit that is mentioned under 3 a.

## **6. INTERNSHIP**

With the consultation of a faculty guide and the coordinator, every student shall undertake suitable internships. Each internship shall be for a minimum of three weeks at an industry during the summer vacation. Report of the Summer Internship is to be submitted by the students within 15 days from the commencement of the third and fifth Semester respectively as per the format and guidelines specified by the coordinator for report preparation.

## **7. PROJECT WORK**

Every student shall undertake a project work in the sixth semester in consultation with the faculty guide and the project coordinator. The project work shall be carried out in institution / industry / research organization. This project is to be carried out for duration of 12 week

## **8. ASSESSMENT OF THEORY COURSES**

<b>ASSESSMENT</b>	<b>MARKS</b>
Continuous Internal Assessment	40
End Semester Examinations	60

**Continuous Internal Assessment** - Allotted marks are 40 for each theory course and the marks are inclusive of a written test and an assignment. The assignment can be in the form of article, seminar, presentation and etc. The choice of assignment is left with the faculty concerned.

- Two written exams (Continuous Internal Assessment Test I & II) with 90 minutes duration for 50 marks may be conducted and this will be converted to 20 marks for each course/subject.
- Students may be asked to submit at least two assignments in each course during each semester.
- Student should also present papers and participate in seminars conducted for each subject.
- Students may be asked pursue on and submit appropriate documents to one or more of the assessment methods.
- The presentations by students would be assessed based on RUBRICS.
  - CRITERIONS:
    - Contributions
    - Attitude
    - Preparedness & Focus
    - Quality of Work
    - Timely completion

<b>POINTS</b>	<b>AWARD OF MARKS</b>
$\geq 90$	10 Marks
$\geq 80$ but $< 90$	8 Marks
$\geq 60$ but $< 80$	6 Marks
$\geq 40$ but $< 60$	4 Marks
$= 40$	2 Marks

- Controller of Examinations will issue the schedule and conduct the written test. Award of internal marks by assessment through various methods specified is the responsibility of the faculty handling the particular course.
- The internal marks obtained by the students will be duly informed before the semester examinations.

**The marks may be allocated as follows:**

Written tests (Each test carries 10 marks)	20 Marks
Assignments / Seminars / Case studies / Article review / Paper presentation / Publications / Field study / Concept viva / Test based on MCQs / Quizzes etc.	10 Marks
Students' Presentation/mini project/any activity as decided by the respective subject faculty	10 Marks
<b>Total</b>	<b>40 Marks</b>

## Question Paper Pattern (CIA)

Total Marks: 50

Duration: 90 Minutes

**PART A** Answer Any Five

(5x3=15 Marks)

1.

2.

3.

.....

7.

**(Remember & Understand)**

**PART B** Answer Any Two

(2x10=20 Marks)

8.

9.

10.

**(Apply, Analyze & Evaluate)**

**PART C** Compulsory Question (Case study)

(1x15=15Marks)

11.

**(Evaluate & Create)**

## 9. ASSESSMENT OF PRACTICAL COURSES

- a. List of exercise for the subjects that contain practical shall be designed by the faculty member who handles the subject for the semester and executed under his/her supervision. Record shall be maintained by the individual student for the exercises carried out.
- b. Maximum Marks for practical is 100 which consist of :

Continuous Internal Assessment (Internal Marks)	End Semester (External Marks)
60	40

- c. End semester exam for practical subjects which has credit, shall be conducted by the internal faculty member in the presence of an External Examiner. The Question paper shall be set by Internal Examiner in consultation with External Examiners and exercises are conducted for the duration designed by them. The assessment is carried out subsequently along with a viva-voce and the results for the same are forwarded to COE.
- d. Criteria for evaluation of experiment may be framed by the course faculty based on the laboratory course.

## 10. EVALUATION OF INTERNSHIP & PROJECT:

### INTERNSHIP

- a. For evaluation of internship, the student will make a presentation of the report on a date to be announced by the Controller of Examinations. The Presentation and Viva-voce will be evaluated by a team consisting of the faculty guide, the

Internal Examiner and another faculty member nominated as the External Examiner.

b. During the internship period students will make presentation once in a week to the concerned faculty guide, and the final presentation-cum-viva voce examination marks shall be allotted as follows :

Type of assessment	Continuous Internal Assessment (Internal)	End Semester
Weekly Review (3)	<b>45</b>	-
Observation	<b>15</b>	-
Report	-	<b>30</b>
Presentation & viva voce	-	<b>10</b>
<b>Total (100)</b>	<b>60</b>	<b>40</b>

The internship report of the students shall be evaluated for a maximum of 100 marks of which 60 marks would be allotted for internal assessment and 40 marks would be allotted for external examination. A minimum of 20 marks should be obtained in external examination and in total 50 marks (Internal + External) should be obtained to pass.

### **PROJECT:**

a. During the project period students will make presentations to the faculty guide / faculty co-ordinator. The final presentation-cum-viva voce examination marks shall be allotted as follows:

Type of assessment	Continuous Internal Assessment (Internal)	End Semester
Project Reviews (3)	<b>60</b>	-
Report	-	<b>80</b>
Presentation & viva voce	<b>20</b>	<b>40</b>
<b>Total (100)</b>	<b>80</b>	<b>120</b>

The project work of the students shall be evaluated for a maximum of 200 marks of which 80 marks would be allotted for internal assessment and 120 marks would be allotted for external examination. A minimum of 60 marks should be obtained in external examination and in total 100 marks (Internal + External) should be obtained to get pass.

b. For evaluation of the project, the student will make a presentation of the Project work on a date to be announced by the Controller of Examinations. The Presentation and Viva-voce will be evaluated by a team consisting of an Internal Examiner and an External Examiner assigned by the Controller of Examination.

## **11. ELIGIBILITY CRITERIA FOR APPEARING IN EXAMINATIONS AND ATTENDANCE REQUIREMENT**

- a. Students fulfilling the following criteria will be allowed to appear in the examinations:
  - (i) Paid all the fees and dues to the Institute
  - (ii) He/She has minimum prescribed attendance in a semester in all courses.
- b. The minimum required attendance is 75% which is calculated with the number of classes appeared in a semester and total number of classes conducted.
- c. If the student was not able to attend classes regularly due to a valid and convincing reason. He/She may get prior/immediate approval with the institute and condone the shortage. This case is only applicable if the student is shortage of 5% or less attendance.
- d. The students deputed by the Institute to take part in the extra and co-curricular events shall be given a concession of up to 5 percent attendance (only once throughout the programme of the study) if necessary, in addition to the relaxations in the attendance requirement as provided above. Such concession would be available for the days of actual participation in the event, including journey time with the prior approval of the Institute.
- e. The students who could not manage 75% attendance for two consecutive semesters have to repeat the semesters in the subsequent academic year. In such cases, the student will have to fulfill all the conditions to redo the programme.

## **12. END SEMESTER EXAMINATIONS**

- a. End semester examinations will be scheduled by the COE / Director for all Practical and Theory courses. The filled in Application forms with the payment of Examination fee for the students is Rs. 300/- per course (including Practical) to be submitted to the COE section within the stipulated time. The question paper will be set by an external examiner.
- b. The End Semester Examination will be conducted for 100 Marks with a duration of 3 hours. A student should secure a minimum of 50 marks in the examination to get a pass in each course. Marks obtained by the students in the examination will be converted to 60%.
- c. A minimum of 50% (End Semester and Continuous Assessment) in each course is required for obtaining a pass and the grades.

**Question Paper Pattern (ESE)**

**Total Marks: 100**

**Duration: 180 Minutes**

**PART A Answer all questions**

**(10x3= 30 Marks)**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

**(Remember & Understand)**

**PART B Answer all questions**

**(5x10=50 Marks)**

11. A or  
B
12. A or  
B
13. A or  
B
14. A or  
B
15. A or  
B

**(Apply, Analyze & Evaluate)**

**PART C Compulsory question**

**(1x20=20 Marks)**

- 16.

**(Evaluate & Create)**

**13. MOVEMENT TO HIGHER SEMESTER**

- a. Every student should register for the next semester along with the statement of results of the previous semester, proof of payment of tuition fees and mess fees (if applicable).
- b. The following students would not be allowed to proceed to the next semester and would have to complete the semester which they had not completed only at the next available opportunity.
  - i. Students who had failed to gain the minimum attendance in one or more courses conducted in the preceding semester
  - ii. Students who had not completed the academic requirements for the course(s) in the preceding semester

- iii. Students who had been barred from taking the continuous internal assessment and or end semester examination for a course(s) other than valid reasons or medical grounds as approved by Director of the institute
- iv. Students who have got pending payments due to the institute
- v. Students who are barred in the preceding semester on grounds and practices of indiscipline
- c. A student who is permitted to discontinue may re-join the programme at the appropriate semester only along with the students enrolled at the time of regular commencement of that semester as per the academic schedule of the institute.
- d. A student who discontinues and re-joins shall be governed by the rules, regulations, courses of study and syllabus followed, at the time of his / her re-joining the programme.
- e. Any student appearing for supplementary examinations in any subject, two years after the first registration for that subject, will be governed by the regulations and syllabus followed at the time when the supplementary examination is taken.

#### **14. PERFORMANCE EVALUATION SYSTEM**

- a. **Assessment of a subject** will be done on mark basis. The Performance Analysis Committee shall meet within three weeks after the completion of all examinations to analyse the performance of students in all assessments (continuous and end semester) for each course.
- b. **The letter grades and the corresponding grade points** are as follows:

Grading system for the programme is as follow:

<b>Marks Range</b>	<b>Corresponding Grade</b>	<b>Grade Point</b>
<b>Below 50</b>	<b>RA (Re- Appearance)</b>	<b>N.A</b>
50 and above but below 60	B (Above Average)	6
60 and above but below 70	B+ (Good)	7
70 and above but below 80	A (Very Good)	8
80 and above but below 90	A+ (Excellent)	9
90 and above 100	O (Outstanding)	10

#### **Classification**

A student in order to be eligible for the award of the Degree must obtain a minimum of “B” grade in each course. The results of successful candidates will be classified as indicated below on the basis of the Cumulative Grade Point Average (CGPA):

<b>S. No.</b>	<b>Range of CGPA</b>	<b>Classification (provided the student pass all courses in the first attempt)</b>
1	CGPA of 8.0 and above and up to 10.0	First Class with Distinction
2	CGPA of 6.5 and above and up to 7.9	First Class
3	CGPA of 5.5 and above and up to 6.4	Second Class

## **15. REVALUATION OF ANSWER SCRIPTS**

Within one week from the announcement of examination result, a student may ask for photocopies of his / her semester / supplementary examination answer paper in any subject on payment of Rs. 400/- per course through proper application to the Controller of Examinations. Subsequently, within a week's time he / she can opt for revaluation if he / she so desires, on payment of Rs. 500/- per course through proper application to the Controller of Examinations.

## **16. SUPPLEMENTARY EXAMINATIONS**

Supplementary examination for failed students will be scheduled along with the semester examinations. Students registering for supplementary examinations at the end of any semester should register for the courses he / she intends to appear by submitting application in the prescribed form with the prescribed fee of Rs.300/- per subject for B.Sc Programme to the Controller of Examinations. The candidates can appear for the supplementary examinations for the maximum period of 2 years from their period of study.

## **17. GRADE SHEET**

- a. After the results are declared, Grade Sheets will be issued to each student which will contain the list of subjects for that semester and the grades obtained by the student.
- b. Grade Point Average (GPA) for each semester will be calculated only for those students who have passed all the subjects of that semester. Similarly, Cumulative Grade Point Average (CGPA) up to any semester will be calculated only for those students who have passed all the subjects up to that semester. GPA is calculated as follows:

$$\text{GPA} = \frac{\sum (C_i * G P_i)}{\sum (C_i)}$$

Where  $C_i$  - is the credit assigned to the course  
 $G P_i$  - is the grade point obtained by the student

- c. On successful completion of the programme, the CGPA is calculated as follows :

$$\text{CGPA} = \frac{\sum (C_i * G P_i)}{N}$$

Where  $C_i$  - is the credit assigned to the course  
 $G P_i$  - is the grade point obtained by the student  
 $N$  - is the total number of credits for the entire programme

## **18. CONSOLIDATED STATEMENT OF GRADES**

- a. At the end of the programme, all successful students will be furnished with a consolidated statement of grades which will contain the following particulars :
  - i. Grades in the courses of the semesters
  - ii. CGPA
  - iii. Classification (First class with Distinction / First class / Second class.

- b. A student who has completed the minimum period and has undergone all the courses specified in a programme may be given a course completion certificate.
- c. At the end of the programme all successful students can apply for the provisional certificate on payment of prescribed fees of Rs.500/- through proper application to the CoE.

#### **19. ELIGIBILITY TO AWARD B.Sc. Textiles**

A student shall be eligible for the award of B.Sc, Textiles if the student has,

- a. Undergone the prescribed programme of study and has passed in all the courses specified for the programme including the value added courses and self-interest courses.
- b. No dues to the Institute, Library, Hostel etc.,
- c. No disciplinary action pending against him / her.

#### **20. WITHDRAWAL FROM EXAMINATION**

A student may for valid reasons and on the recommendation of the Programme Co-ordinator, be granted permission to withdraw from appearing for the entire Semester Examination as one unit. Withdrawal application shall be valid, only if it is made 10 days before the commencement of the semester examination pertaining to the semester. Such withdrawal shall be permitted only once during the entire programme and shall not be construed as an appearance for the eligibility of a student for the award of classification specified. If a student falls sick in the middle of the Semester Examinations, he / she can withdraw from one or more courses.

## **BACHELOR OF SCIENCE –TEXTILES**

### **CURRICULUM & SYLLABUS**

#### **PROGRAM EDUCATIONAL OBJECTIVES (PEOs):**

Bachelor of Science – Textiles curriculum is designed to prepare the undergraduates to

- I. Have attitude and knowledge for the successful professional and technical career
- II. Have strong foundation in basic sciences, management, mathematics and computational platforms
- III. Have knowledge on the theory and practices in the field of apparel manufacturing technology and allied areas
- IV. Engross in life-long learning to keep themselves abreast of new developments, and practice and inspire high ethical values and technical standards

#### **PROGRAM OUTCOMES ( POs):**

The Bachelor of Science – Textiles graduates will have the ability to

1. Identify, formulate, review literature and critically analyze the technological problems in the apparel industry to reach substantiated conclusion
2. Apply knowledge of mathematics, sciences, textile and apparel technology to get solution for the technological problems in apparel industry
3. Design and develop the solutions to the technological and managerial problems in apparel industry with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations
4. Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions to the technological problems in apparel industry
5. Create, select, and apply appropriate techniques, resources, and modern technology and IT tools for managing apparel manufacturing companies with an understanding of the limitations
6. Apply reasoning gained through the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the profession
7. Understand the impact of the developed solutions in societal and environmental contexts, and demonstrate the knowledge for sustainable development
8. Understand ethical and professional responsibilities
9. Function effectively as an individual, and as a member or leader in diverse teams in the profession
10. Communicate effectively on complex technical activities with the technical community and with society at large. Able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Demonstrate knowledge and understanding of the science, technology and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments
12. Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change

#### **PROGRAM SPECIFIC OUTCOMES (PSOs):**

The Bachelor of Science – Textiles graduates will have the ability to

1. Understand and apply the technical knowledge for managing apparel manufacturing industry
2. Be a successful entrepreneur and textile and apparel researcher.
3. Design and develop novel textile and apparel products and apparel manufacturing processes

#### **List of abbreviations**

- L – Lecture Hours / Contact Sessions
- T – Tutorial Hours
- P – Practical Hours
- C – Credit
- CT – Course Type
- AM – Assessment Methodology
- CIA – Continuous Internal Assessment
- ESE – End Semester Examination
- CC – Core Courses
- EC – Elective courses
- LB – Laboratory course
- I – Internship
- PW – Project Work
- VC – Value Added Courses
- SI – Self Interest Course

<b>SEMESTER I</b>								
<b>COURSE CODE</b>	<b>COURSE NAME</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>	<b>CT</b>	<b>AM</b>	
							<b>CIA</b>	<b>ESE</b>
22BSUG11/ 22BSUG12	Tamil - I / Hindi - I	3	0	0	3	CC	40	60
22BSUG13	Communicative English	3	0	0	3	CC	40	60
22BSUG14	Applied Physics and Chemistry	3	0	0	3	CC	40	60
22BSTX15	Concepts of Fashion and Design	4	0	0	4	CC	40	60
22BSTX16	Fibre and Yarn Science	4	0	0	4	CC	40	60
22BSTX17	Fashion Designing Laboratory	0	0	4	2	LB	60	40
22BSUG18	Applied Physics and Chemistry Laboratory	2	0	4	2	LB	60	40
22BSTX19	Fibre and Yarn Science Laboratory	0	0	4	2	LB	60	40
<b>Total</b>		<b>19</b>	<b>0</b>	<b>12</b>	<b>23</b>			

<b>SEMESTER II</b>								
<b>COURSE CODE</b>	<b>COURSE NAME</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>	<b>CT</b>	<b>AM</b>	
							<b>CIA</b>	<b>ESE</b>
22BSUG21/ 22BSUG22	Tamil - II / Hindi – II	3	0	0	3	CC	40	60
22BSUG23	Technical English	3	0	0	3	CC	40	60
22BSTX24	Statistics	4	0	0	4	CC	40	60
22BSTX25	Fabric Manufacturing	3	0	0	4	CC	40	60
22BSTX26	Apparel Manufacturing - I	4	0	0	4	CC	40	60
22BSTX27	Environmental Science	2	0	2	2	CC	40	60
22BSTX28	Fashion Illustration Laboratory	0	0	4	2	LB	60	40
22BSTX29	Fabric manufacturing laboratory	0	0	4	2	LB	60	40
22BSUG20	Yoga for Human Excellence#	0	0	2	1	VC	100	-
<b>Total</b>		<b>19</b>	<b>0</b>	<b>10</b>	<b>25</b>			

SEMESTER III								
COURSE CODE	COURSE NAME	L	T	P	C	CT	AM	
							CIA	ESE
22BSTX31	Fabric Structure and Analysis	4	0	0	4	CC	40	60
22BSTX32	Pattern Engineering	4	0	0	4	CC	40	60
22BSTX33	Apparel Manufacturing - II	4	0	0	4	CC	40	60
22BSTX34	Mathematical Data Analysis	2	0	2	3	CC	40	60
22BSTX35	Elective - I	3	0	0	3	EC	40	60
22BSTX36	Pattern making Laboratory - I	0	0	4	2	LB	60	40
22BSTX37	Garment Construction Laboratory - I	0	0	4	2	LB	60	40
22BSTX38	Fabric Structure and Analysis Laboratory	0	0	4	2	LB	60	40
22BSUG30	Internship - I	0	0	0	3	I	60	40
<b>Total</b>		<b>18</b>	<b>0</b>	<b>12</b>	<b>27</b>			

SEMESTER IV								
COURSE CODE	COURSE NAME	L	T	P	C	CT	AM	
							CIA	ESE
22BSTX41	Textile and Apparel Chemical Processing	4	0	0	4	CC	40	60
22BSTX42	Applications of ERP and MIS in Apparel Industry	3	0	0	3	CC	40	60
22BSTX43	Industrial Engineering in Apparel Industry	4	0	0	4	CC	40	60
22BSTX44	Quality Assurance in Fabric and Apparel Production	3	0	0	3	CC	40	60
22BSTX45	Elective – II	3	0	0	3	EC	40	60
22BSTX46	Pattern making Laboratory II	0	0	4	2	LB	60	40
22BSTX47	Garment Construction Laboratory II	0	0	4	2	LB	60	40
22BSTX48	Textile and Apparel Chemical Processing Laboratory	0	0	4	2	LB	60	40
<b>Total</b>		<b>17</b>	<b>0</b>	<b>12</b>	<b>23</b>			

SEMESTER V								
COURSE CODE	COURSE NAME	L	T	P	C	CT	AM	
							CIA	ESE
22BSTX51	Apparel Marketing and Merchandising	4	0	0	4	CC	40	60
22BSTX52	Industrial Management	3	0	0	3	CC	40	60
22BSTX53	Textile and Apparel Quality Evaluation	3	0	0	3	CC	40	60
22BSTX54	Elective - III	3	0	0	3	EC	40	60
22BSTX55	Elective - IV	3	0	0	3	EC	40	60
22BSTX56	Textile and Apparel Quality Evaluation Laboratory	0	0	4	2	LB	60	40
22BSTX57	Computer Aided Garment Design Laboratory	0	0	4	2	LB	60	40
22BSTX58	Fashion Portfolio Laboratory	0	0	4	2	LB	60	40
22BSUG50	Internship - II	0	0	0	3	I	60	40
<b>Total</b>		<b>16</b>	<b>0</b>	<b>12</b>	<b>25</b>			

SEMESTER VI								
COURSE CODE	COURSE NAME	L	T	P	C	CT	AM	
							CIA	ES E
22BSTX61	Apparel Costing and Export Documentation	3	0	0	3	CC	40	60
22BSTX62	Entrepreneurship Development	3	0	0	3	CC	40	60
22BSUG63	Value Added Course - I #	1	0	0	0	VC	100	-
22BSUG64	Value Added Course - II #	1	0	0	0	VC	100	-
22BSUG65	Self Interest Course #	0	0	0	1	SI	100	-
22BSUG60	Project Work	0	0	24	12	PW	80	120
<b>Total</b>		<b>8</b>	<b>0</b>	<b>24</b>	<b>19</b>			

Total credits – **142**

## **ELECTIVES**

<b>SEM III – 22BSTX35 - Elective I</b>	
<b>A</b>	Apparel Size and Fit Analysis
<b>B</b>	Home Textiles
<b>SEM IV – 22BSTX45 - Elective II</b>	
<b>A</b>	Fashion Photography
<b>B</b>	Technical Textiles
<b>SEM V – 22BSTX54 - Elective III</b>	
<b>A</b>	Total Quality Management for Textile and Apparel Industry
<b>B</b>	Apparel Production Planning and Process Control
<b>SEM V – 22BSTX55 - Elective IV</b>	
<b>A</b>	Retail Management and Visual Merchandising
<b>B</b>	Fashion Forecasting and Brand Management

### **List of Value Added Courses:**

- Fashion Accessories
- Product Design and Development
- Visual Merchandising
- Intellectual Property Rights
- Digital Marketing
- Event Management
- Low Cost Automation
- Internet of things (IoT)

The courses may be offered as per the requirement of the industry and choice of the students. The list may be updated as per the recent trends.

**SEMESTER I**  
**22BSUG11 - TAMIL – I**

**குறிக்கோள்கள்:**

- பாரத நாட்டின் பெருமை, தற்போதைய சமூக நிகழ்வுகளையும் மனித உணர்வுகளையும் புது கவிஞர்கள் வாயிலாக மாணவர்களுக்கு உணர்த்துதல்
- வாழ்வில் பின்பற்றுவேண்டிய தனி மனித சமூக ஒழுக்கங்களை சிறுக்கதை மற்றும் உரைநடை வாயிலாக மாணவர்களுக்கு உணர்த்துதல்

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2			
i.						
ii.						
iii.						
iv.	<b>S</b>	<b>S</b>				

**அலகு - 1 (செய்யுள்)**

- 1.பாரதியார் - பாரத நாடு
- 2.பாரதிதாசன் - உலகம் உன்னுடையது
- 3.நாமக்கல் கவிஞர் இராமலிங்கம் பிள்ளை- சூரியன் வருவது யாராலே
- 4.அழ.வள்ளியப்பா - ஒரு வரம் கண்ணாடி
- 5.கண்ணதாசன் - யாத்திரை

**அலகு - 2 (செய்யுள்)**

1. மு. மேத்தா - மரங்கள்
2. வைரமுத்து - சுதந்திரம்
3. ஈரோடு தமிழ்னபன்- அகல் விளக்காக இரு
4. அப்துல் ரகுமான்- கண்ணீரின் ரகசியம்....

5. மாலதி மைத்ரி- குருவி
6. வத்ஸலா - நான் ஆலமரம்

#### அலகு - 3 (இலக்கணம்)

- 1.வல்லெலமுத்து மிகும் இடங்கள்
- 2.வல்லெலமுத்து மிகா இடங்கள்

#### அலகு-4 (இலக்கிய வரலாறு)

- 1.மரபுக்கவிதையின் சிறப்பு இயல்புகள்
- 2.புதுக்கவிதையின் சிறப்பு இயல்புகள்
- 3.சிறுகதையின் தோற்றமும் வளர்ச்சியும்
- 4.உரைநடையின் தோற்றமும் வளர்ச்சியும்

#### அலகு-5

1. அறம் எனப்படுவது - முனைவர். அமுதன்
2. அழகோ அழகு - வெ. இறையன்பு

#### பாட புத்தகம்:

1. அறம் எனப்படுவது (முனைவர். அமுதன்) - நியூ செஞ்சரி புக் ஹவஸ் பி லிட், 41பி, சிட்கோ இண்டஸ்டிரியல் எஸ்டேட், அம்பத்தூர், சென்னை-600098
2. அழகோ அழகு - வெ. இறையன்பு - நியூ செஞ்சரி புக் ஹவஸ் பி லிட், 41பி, சிட்கோ இண்டஸ்டிரியல் எஸ்டேட், அம்பத்தூர், சென்னை-600098

#### குறிப்பு புத்தகம்:

1. தீந்தமிழ் இலக்கணம் (க. வெள்ளிமலை எம்.ஏ.) - ஜவாரி அச்சகம், சென்னை - 600005

2. இலக்கணம் இலக்கிய வரலாறு மொழித்திறன் (பேராசிரியர். முனைவர். பாக்யமேரி) -  
பூவேந்தன் பதிப்பகம், மயிலாப்பூர், சென்னை.

## 22BSUG12 - HINDI – I

### Course Objectives

- To enable the learners to know about the modern trends in Literature
- To imbibe values, social, moral through prose and short stories.
- To introduce the concept of Translation.
- To create an opportunity for the students to learn functional aspects of the National language.

### Course Outcome

Upon completion the student would be able to,

- Identify the importance a prose
- Translate Hindi to English
- To know about Hindi writers and get moral values from different stories.
- Comprehension will help the students for competitive exams.

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2	3	4	
		i.				
ii.						
iii.						
iv.	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>		

### UNIT I

**Prose:** 1. Meri vasiyath, 2. Kadhamba ke phool, 3. bathcheeth mem shistachar

### UNIT II

**Non-Detailed:** 1. Pareeksha, 2. Takur ka kuwa, 3. Trishanku bechara

### UNIT III

Bahuyuktha hindi padnam

### UNIT IV

**Translation:** Hindi to English only (1 – 10 Lessons only).

### UNIT V

**Comprehension:** 15 - 30 Lessons only.

### TEXT BOOKS:

1. Gadhya Manjusha-editor, Govind. M. A., Amar Prakashan, Mathura, (U.P).

2. Hindi Gadhya Prabhakar, **Editor:** Dr. Hiranmaya, Publisher: Siksha Bharathy, Kashmiri Gate, New Delhi – 110006.
3. Madhyamic Gadhya sankalan – Editor: Shrimathi Kamala Shankar, Publisher: Lokbharathi Prakashan, 15-A, Mahathma Gandhi Marg, Allahabad – 1.
4. Kahani Kunj, **Editor:** Dr. V. P. Amithab, Publisher: Govind Prakashan, Sadar Bazaar, Mathura, U. P. – 281 001.
5. Premchand ki shreshtha Kahaniyan by Kumar Krishnan, Publisher: Vani Prakashan, 21-A, Dariya ganj, New Delhi – 110002.
6. Gadhya Prasang by Dr. Sathya Prakash, Publisher: Sumithra Prakashan, 16/4, Hastings Road, Allahabad - 1
7. Vyavaharic Hindi by Sayed Rahamadulla (Page: 90-91).
8. Anuvad Abhyas – Part III by D.B.H.P. Sabha, Chennai - 17

## 22BSUG13 - COMMUNICATIVE ENGLISH

### Course Objectives:

- To convey message to others clearly
- To develop communication skills
- To enhance students' communicative competence and performance
- To instill language skills

### Course Outcomes:

- Expanding the learner's use of maximum functions of English
- Acquiring effective communications both oral and written
- Applying language functions in real situations.

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2	3	4	
	i.					
	ii.					
	iii.					
	iv.	S	S	S	S	

### UNIT I: Functions of English

Use of English in media, business and technology – Social functions: Conversational English Greeting, introducing, requesting, inviting, congratulating, thanking, apologizing, advice, suggestions, opinions, permission, sympathy, asking to repeat, complaining, understanding and being understood, agreement, preference, asking for information, changing the topic.

### UNIT II: Oral Communication

Face to face communication – Telephonic conversation: Skills and etiquette – Interview skills – Instruction – Dictation.

### UNIT III: Remedial Grammar

Subject verb agreement – Tenses – Transformation of sentence – Auxiliary verbs – Linkers.

### UNIT IV: Listening and Reading

Academic listening; Listening to talks and descriptions; Listening to Announcements; Listening to Media news; Listening to casual conversations – Intensive reading, extensive reading, skimming, scanning, literary reading, non-literary reading

### UNIT V: Written Communication

Email – letter writing - report writing – note taking – sentence construction (patterns)

**TEXT BOOKS:**

1. Syamala V. Effective English Communication for you, Emerald Publishers, Chennai, 2005. ISBN: 81-7966-002-8.
2. Mr. Mohan, Mr. Krishna and Ms. Meera Banerji, Developing Communication Skills, Macmillan, New Delhi, 2007. ISBN: 978-0333-92919-3.
3. Mr. Dutt, Mr. P. Kiranmai, Ms. Geetha Rajeevan and Mr. C.L.N. Prakash, A Course in Communication Skills, Cambridge University Press, New Delhi, 2007. ISBN: 978-81-7596-5362

## 22BSUG14 – APPLIED PHYSICS AND CHEMISTRY

### Course Objectives

- To understand the application of physics and chemistry in Textiles
- To relate various important terminologies and laws with textile application

### Course Outcomes

- Upon successful completion of the course the student would be able to,
- Discuss various terminologies related to elasticity, viscosity
- Identify the origin of dyes
- Explain the polymerization process

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2	3		
	i.	<b>S</b>	<b>S</b>			
ii.						
iii.	<b>M</b>					
iv.						

### UNIT I

Colour and Chemical Constitution: Colour and constitution - theory of colors. Classification of dyes based on structure, according to application and mode of dyeing. Chemistry of azo dyes, selective examples and its usage in clothing textile.

### UNIT II

Chemical analysis of oils and fats: Acid value, saponification and iodine values, viscosity, viscosity index, flash and fire points. Surfactants: Classification and chemistry of surfactants- application of surfactants in textiles.

### UNIT III

Polymers: Introduction – Classification – Types and mechanism of polymerization – Degree of Polymerization. Synthesis of some selective polymers: Polyethylene (LDPE & HDPE), Polyacrylonitrile, Polyesters (PET), Polyamides – Nylon 6 and Nylon 6, 6.

### UNIT IV

Elasticity: Modulus of elasticity – Poisson's ratio – Relation between elastic constants and Poisson's ratio – Torsional pendulum (with and without weights) – Bending of beams – Bending

moment – Cantilever loading – Transverse vibrations of cantilever – Non uniform and uniform bending of a beam.

## **UNIT V**

Surface Tension and Viscosity: Molecular interpretation – Surface energy – Molecular force – Shape of liquid meniscus in capillary tube – Angle of contact – Capillary rise and energy consideration. Newton“s law – Poiseuilles flow – Stoke“s fall – Rotation viscometer – Ostwald viscometer. Effect of temperature and pressure on viscosity.

### **TEXT BOOKS:**

1. Mathur D S, “Elements of Properties of matter”, S Chand Limited, 2008.
2. Brijlal & Subhramanyam N, “Properties of matter”, S Chand & Co., New Delhi, 2003.
3. Soni P L & Chawla H M, “Text book of Organic Chemistry”, S Chand & Co., New Delhi, 2012.
4. B.K.Sharma, “Industrial chemistry”, Krishna Prakashan Media (P) Ltd, Meerut, 2011.

### **REFERENCES:**

1. Gulati H R, “Fundamental of General properties of matter”, R Chand & Co., 1982.
2. White F. M, “Fluid Mechanics”, Tata McGraw-Hill, 5th edition, New Delhi, 2017.
3. K.S. Tiwari, N.K. Vishnoi, S.N. Mehrotra, “A Text Book of Organic Chemistry”, Vikas Publishing House, 4th Ed., New Delhi, 2017.
4. Shore J.“Colourants and Auxiliaries: Volume II Auxiliaries”, Wood head Publishing Ltd.,2002.

## 22BSTX15 – CONCEPT OF FASHION AND DESIGN

### Course Objectives

- To understand the fundamental design, fashion terminologies, elements and principle of design.
- To understand the significance and impact of colour on fashion products.
- To understand the fashion trend and forecasting.

### Course Outcomes

- Upon completion of the course the student would be able to,
- Define the elements of fashion and design
- Apply various methods of forecasting
- Identify colours based on colour theory

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO	1	2	3			
	i.					
	ii.	<b>S</b>	<b>S</b>	<b>S</b>		
	iii.		<b>m</b>			
	iv.					

### UNIT I

Introduction to fashion: Definition – origin and history of Indian fashion – principles of fashion. Terms related to the fashion: style, fad, classic, collection, chic, costume made, mannequin, fashion-show, trend, forecasting, high fashion, fashion cycle, haute couture, couture, couturier, fashion direction, fashion editor, line, knock-off, avant- grade, bridge, buying house, apparel, pret-a-porter and sample.

### UNIT II

Types of design: Definition – structural, decorative and ornamental design. Requirements of a good structural and decorative design. Elements of design: Definition – types- Dot, Line, form, shape, texture and colour.

### UNIT III

Principles of Design: Definition- Harmony: line, shape, colour, texture and idea – Balance: Symmetrical, Asymmetrical and radial – Rhythm: Repetition, progression, transition, radiation and continuous line movement – Emphasis – Proportion or scale.

## **UNIT IV**

Colour – Definition, elements of colour, hue, value and intensity, classification of colour: primary, secondary and tertiary. Colour theory: Prang and Munsell colour chart – colour schemes, important colour qualities, selection of colour for various occasion and seasons.

## **UNIT V**

Fashion trends: Fashion evolution – fashion cycles – trend analysis – techniques.

Fashion forecasting: Types – factors influencing fashion changes. Role of fashion designers. Top 10 Indian and International designers (self-study).

### **TEXT BOOKS:**

1. Sumathi, G. J. (2007). Elements of Fashion and Apparel Design. Reprint. New Delhi: New Age International Publisher Limited.
2. McKelvey, Kathryn and Munslow, Janine. (2011). Fashion Design: Process, Innovation and Practice. 2<sup>nd</sup> Edition. John Wiley and Sons.
3. Frings, Gini Stephan. (2007). Fashion from concept to consumer. 9<sup>th</sup> Edition. Pearson Education.

### **REFERENCES:**

1. Davis, Jenny. (2006). A Complete Guide to Fashion Designing. 1<sup>st</sup> Edition. Chandigarh: Abhishek Publications.
2. Mahadevan, M. G. (2008). Textile colouring. 1<sup>st</sup> Edition. Chandigarh: Abhishek Publication.
3. Steele, Valerie. (2005). Encyclopedia of Clothing and Fashion. Charles Scibner's and Sons.
4. Hopkins, John. (2012). Fashion Design: The Complete Guide. Vol 36. A and C Black Publishers.
5. Mullick, Premlata. (2006). Textbook of Textile Designing. 1<sup>st</sup> Edition. Ludhiana: Kalyani Publishers.
6. Parachure, J. W. (2009). Fundamentals of Designing for Textiles and Other End Use. New Delhi, India: Woodhead Publishing.
7. Riegelman, Nancy. (2006). Colour for Modern Fashion: Drawing Fashion with Colored Markers. 1<sup>st</sup> Edition. Nine Heads Media Publication.

## 22BSTX16 – FIBRE AND YARN SCIENCE

### Course Objectives

- To study the basics of textile fibre and its properties
- To understand the various yarn manufacturing processes.

### Course Outcomes

- Upon completion of the course the student would be able to,
- Gain thorough knowledge on various fibre manufacturing processes.
- Understand the properties of various textile fibres and their impact on processes.
- Ability to understand the process sequences of various yarn manufacturing techniques.

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S – Strong, M-Medium )				
		CO				
PEO		1	2			
		i.	s			
ii.						
iii.	s					
iv.						

### UNIT I

Fibre: Introduction - essential fibre properties - classification of fibres. Fibre identification. Applications of textiles fibres.

Natural fibre: Introduction - source, morphological structure, properties and end uses of cotton, silk and wool.

### UNIT II

Regenerated fibre: Introduction - manufacturing sequence and properties of viscose rayon.

Synthetic fibre: Introduction to polymer – types of polymer and polymerization. Manufacturing process and properties - polyester, nylon and acrylic fibres. Methods of filament spinning – dry, wet and melt spinning

### UNIT III

Yarn: Introduction - staple spinning system – cotton yarn production sequence (blowroom to ring spinning). Study of yarn twist and its importance. Direct and indirect yarn numbering systems, conversion factors.

Blended yarn: Types of blending – benefits of blending

### UNIT IV

Double yarn: Properties – uses. Classification of sewing threads – essential properties - production process of spun polyester sewing thread.

Winding: Introduction – types (cone and cheese) – yarn and package defects.

## **UNIT V**

Fancy yarns: Introduction - texturized yarn, core spun, cover spun. - chenille, slub, nep, snarl, spiral, loop, marl, gimp and chainette.

Modern spinning systems: Principles and yarn properties- open end, air-jet, friction.

### **TEXT BOOKS:**

1. Mishra, S. P. (2000). A Text Book of Fibre Science and Technology. New Delhi: New Age International Pvt. Ltd.
2. Corbman, Bernard. P,(2000). Textiles: Fibre to Fabric, 6th edition. Singapore: International students Edition McGraw Hill Book.

### **REFERENCES:**

1. Wynne, A. (1997). The Motivate Series – Textiles. London: Macmillan Education Ltd.
2. Chellamani, K. P. Yarns and Technical Textiles. Coimbatore: Kalai Kathir Achagam.
3. Pal Sing, K. V. (2004). Introduction to Textiles. New Delhi: Kalyani publishers.
4. Sekhri, Seema. (2011). Textbook of Fabric Science. New Delhi: PHI Learning PrivateLimited.

## 22BSTX17 – FASHION DESIGNING LABORATORY

### Course Objectives

- Understand the basic concepts of fashion art and learning the aspects of fashion rendering.
- Improve their skills in creating new designs in dresses.
- Develop their skills in fashion arts and creating innovative sketches

### Course Outcomes

Upon completion of the course the student would be able to,

- Inculcate excellent illustration skill.
- Develop effective design communication skill.
- Diagnose the colour combination for various rendering.

MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S – Strong, M-Medium )					
PEO	CO				
	1	2	3		
i.					
ii.	<b>S</b>	<b>S</b>	<b>S</b>		
iii.		<b>M</b>			
iv.					

### LIST OF EXPERIMENTS:

1. Understand the Basic design
2. Understand the following Colour wheels:
  - a. Prang colour chart
  - b. Munsell
  - c. Physicsts
  - d. Chemists
3. Prepare the following Charts
  - a. Value Chart
  - b. Intensity Chart
4. Illustrate garment designs for the Elements of Design
  - a. Line
  - b. Colour
  - c. Texture
  - d. Shape or form
  - e. Size

5. Illustrate garment designs for the Principles of Design

- a. Balance in dress
- b. Harmony in dress
- c. Emphasis in dress
- d. Proportion in dress
- e. Rhythm in dress

6. Illustrate the Colour Harmony in Dress Design

- a. Monochromatic colour harmony
- b. Analogous colour harmony
- c. Complimentary colour harmony
- d. Double Complimentary colour harmony
- e. Split Complimentary colour harmony
- f. Triad colour harmony

7. Application of colour and principles of design in dress

- a. Harmony through colour
- b. Emphasis through colour
- c. Proportion through colour
- d. Rhythm through colour
- e. Balance through colour

8. Illustration of Basic silhouettes

9. Designing dresses for figure irregularities – becoming and unbecoming Stout figure, Thin figure, Slender figure

10. Illustration of various types of shoulders – narrow, broad and round shoulders

11. Illustration of various types of faces – round face, large face, small face.

## **REFERENCES:**

1. Abling, Bina. (2012). *Fashion Sketchbook*. 6th Edition. New York: Fairchild Book Publications.
2. Davis, Marian. L. (1996). *Visual Design in Dress*. 3rd Edition. New Jersey: Prentice Hall Inc.
3. Morris, Bethan. (2006). *Fashion Illustrator*, New Delhi: Laurence King Publishing.
4. Ireland, Patrick John. (1996). *Fashion Design Illustration: Men*. UK: Pavilion Books.
5. Ireland, Patrick John. (2003). *Fashion Design Drawing and Presentation*. Batsford Publishers.
6. Wayne, Chilley. (2009). *Essential Fashion Illustration: Men*. Beverly, Massachusetts: Rockport Publishers

## 22BSUG18 – APPLIED PHYSICS AND CHEMISTRY LABORATORY

### Course Objectives

- To experiment and define the various laws in physics and chemistry
- To apply and recognize the important laws of physics and chemistry

### Course Outcomes

- Upon successful completion of the course the student would be able to,
- Analyse the various laws and principles in physics and chemistry
- Demonstrate various experiments to prove the laws like Young's modulus, Searle's viscometer and newton's rings

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )					
		CO					
PEO		1	2				
		i. <b>s</b>	<b>s</b>				
ii.							
iii.	<b>m</b>						
iv.							

### LIST OF EXPERIMENTS:

#### Physics:

1. Young's Modulus – Non-uniform bending – Pin and microscope
2. Surface tension – Capillary rise method
3. Surface tension and interfacial surface tension – Drop weight method
4. Newton's rings – Radius of curvature of the given lens

#### Chemistry:

1. Qualitative analysis of organic compounds: (Any 3 substances)  
Determination of aromatic / aliphatic, saturated / unsaturated, presence of special elements (Nitrogen, Sulphur, Halogens), presence of functional groups of the following compounds:

- a. Carbohydrates
- b. Phenol
- c. Aniline
- d. Aldehydes
- e. Carboxylic acids

2. Quantitative analysis:
  - a. Estimation of Sodium hydroxide,
  - b. Estimation of Oxalic acid
  - c. Estimation of Hardness.

**REFERENCES:**

1. Thomas, A. O. (2009). Practical Chemistry. Kannur: Scientific Book Centre.
2. Venkateswaran, V., Veeraswamy, R. & Kulandaivelu, A. R. (2015). Basic Principles of Practical Chemistry. New Delhi: S Chand & Sons.

## 22BSTX19 – FIBRE AND YARN SCIENCE LABORATORY

### Course Objectives

- To identify the various textile fiber
- To understand the essential yarn properties

### Course Outcomes

- Upon completion of the course the student would be able to,
- Identify various fibers
- Assess the yarn quality parameters

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S – Strong, M-Medium )				
		CO				
PEO	1	2				
	i.		S			
	ii.					
	iii.	S				
	iv.					

### LIST OF EXPERIMENTS

1. Identification of fibers – microscopic view
2. Identification of fibers based on feel, solubility and burning test
3. Determination of fibre fineness
4. Determination of fiber length
5. Determination of moisture regain of fibres
6. Determination of linear density – sliver, roving and yarn
7. Determination of yarn twist (S / Z)
8. Determination of strength (Lea)
9. Determination of yarn appearance

### REFERENCES:

1. Mishra, S. P. (2000). A Text Book of Fibre Science and Technology. New Delhi: New Age International Pvt. Ltd.
2. Corbman, B. P. (2000). Textiles: Fibre to Fabric. Singapore: International students Edition McGraw Hill Book Company.

**SEMESTER II**  
**22BSUG21 – TAMIL - II**

**குறிக்கோள்கள்:**

- மாணவர்களின் மனநலத்துக்கும் வருங்கால வாழ்வுக்கும் உதவும் வகையில் இலக்கியப் பயிற்சி அளித்தல்
- அறம் சார்ந்த வாழ்வியல் விழுமியங்களைக் கற்பித்தல்
- சமயங்களை பற்றி மாணவர்களுக்கு உணர்த்துதல்
- வாழ்வில் கடை பிடிக்க வேண்டிய ஒழுங்குமுறைகளை இலக்கியங்கள் மூலம் கற்றல்
- தமிழர் வீர வினையாட்டுகளை குறுநாவல் வழி கற்றல்
- 

MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES					
PEO	CO				
	1	2	3	4	5
i.					
ii.					
iii.					
iv.	S	S	S	S	S

**அலகு - 1**

திருக்குறள் - 1. ஊக்கமுடைமை 2. செய்நன்றியறிதல்

நாலடியார் - 1. பொறையுடைமை (5 பாடல்கள்) 2. பெரியாரைப்பிழையாமை (5 பாடல்கள்)

**அலகு - 2**

திருஞானசம்பந்தர் தேவாரம் - கோளறாதிருப்பதிகம் (10 பாடல்கள்) பெருமாள்

திருமொழி - 11 பாடல்கள். இயேசுகாவியம் - பாரச்சிலுவை (8 பாடல்கள்)

சீறாப்புராணம் - கடவுள் வாழ்த்து (5 பாடல்கள்)

### அலகு - 3 - இலக்கணம்

பவணந்தி முனிவர் - நன்னூல் - எழுத்து - மாணாக்கனது வரலாறு பாடங் கேட்டலின் வரலாறு

### அலகு - 4 - உரைநடைப் பகுதி

1. நல்லதை நோக்கி நடப்போம் - சுகி சிவம்
2. கல்வியும் கடவுட் தன்மையும் - வெ. இறையன்பு
3. அக்னிச் சிறகுகள் (அத்தியாயம் 1) முனைவர். எ பி ஜே அப்துல் கலாம்
4. அன்பிற் சிறந்த தவமில்லை - தமிழருவி மணியன்
5. சாதனை படைக்கும் சிந்தனைகள் - உயர்வளிக்கும் எண்ணாங்கள் - டாக்டர். சிவகுரியன்

### அலகு - 5

வாடி வாசல் (நாவல்) - சி.சு.செல்லப்பா - காலச்சவடு பதிப்பகம்

#### குறிப்பு புத்தகம்:

1. நல்லதை நோக்கி நடப்போம் - சுகி சிவம்
2. கல்வியும் கடவுட் தன்மையும் - வெ. இறையன்பு
3. அக்னிச் சிறகுகள் (அத்தியாயம் 1) முனைவர். எ பி ஜே அப்துல் கலாம்
4. தமிழருவி மணியன் - அன்பிற் சிறந்த தவமில்லை
5. டாக்டர். சிவகுரியன் - சாதனை படைக்கும் சிந்தனைகள் - உயர்வளிக்கும் எண்ணாங்கள்
6. பவணந்தி முனிவர் - நன்னூல்
7. சி.சு.செல்லப்பா - காலச்சவடு பதிப்பகம்

## 22BSUG22 – HINDI II

### Course Objectives:

- To enable the students to know about the Modern Trends in Literature as the contemporary literature deals with the changing trends in the socio-economic cultural revolution taking place in the social system.
- To introduce the importance of letter writing, dialogue writing and applied grammar in Hindi literature.

### Course Outcomes:

- Students can avoid grammatical mistakes.
- To know the letter writing methods, and how to write laghu kathayem by studying the stories.

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2			
		i.				
ii.						
iii.						
iv.		<b>s</b>	<b>s</b>			

### UNIT I

1. Sawal, 2. Jeevan ki theen pradhan bathem, 3. Do Chere.

### UNIT II

Lagu Kathayem: 1. Fees, 2. Risthe, 3. Kelne ke din, 4. Kamra

### UNIT III

Applied Grammar: 1. Line Badaliye, 2. Vachan Badaliye, 3. Vachya Badaliye, 4. Ulte arthavale shabda likiye, 5. Karak cinhom se bariye, 6. Vakyom mem prayog kijiye, 7. Kaal Badaliye, 8. Shudda kijiye.

### UNIT IV

Vakya ke liye ek Shabda (one word for one sentence).

### UNIT V

Letter Writing: 1. Leave letter, 2. About a tour from the college, 3. About a function celebrated in the college, 4. Applying for the job, 5. Ordering for the books.

**TEXT BOOKS:**

1. Hindi Gadhya Prabakar, Editor: Dr. Hiranmay, Publisher: Shiksha Bharathy, Kashmiri Gate, New Delhi - 6
2. Bharathi Gadhya Sangrah by Vani Prakashan, New Delhi.
3. From Laghu Katha.com.
4. Sugam Hindi Vyakaran, Siksha Bharathi Madarsa Road, Kashmiri Gate, New Delhi.
5. Abhinav Pathra Lekhan by D.B.H. Prachar Sabha, Chennai – 17.

## 22BSUG23 – TECHNICAL ENGLISH

### Course Objectives:

- To enhance ability and skills of the students to comprehend technical texts
- To develop their speaking skills in paper presentation, discussions etc.
- To acquire proper writing skill for reports, and official communications
- To facilitate them to acquire proper pronunciation skills.

### Course outcomes:

- Listening, Reading and Comprehending technical texts, lectures, and talks
- Speaking in formal and informal situation
- Writing reports, Curriculum vitae, Circular, Notice and Minutes
- Acquiring phonetic skills

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2	3	4	
i.						
ii.						
iii.						
iv.	S	S	S	S		

### UNIT I: Applied Phonetics

The phonological system in English – speech sounds – stress, rhythm – strong and weak forms – pitch and intonation

### UNIT II: Technical Proposals

Definition and key factors – types – contents – format - evaluation

### UNIT III: Formal reports

Definition – preparatory steps – types – structure – textile vocabulary

### UNIT IV: English for specific purpose

Business communication – competitive examinations (TOEFL etc.) – paper presentations – description and demonstration, advertisement – notices, agenda and minutes

### UNIT V: Career skills

Curriculum vitae and cover letters – soft skills – mock interviews – group discussion – personality traits

**TEXT BOOKS:**

1. Raman, Meenakshi and Sharma, Sangeetha – Technical Communication Principles and Practice, Oxford University Press: New Delhi, 2014
2. Means, L Thomas and Elaine Langlois, English & Communication for Colleges, Cengage Learning, USA: 2007

## 22BSTX24 – STATISTICS

### Course Objectives

- To enable the students to acquire knowledge in the area of statistics and their applications in business decision making.
- To familiarize the student with functions of several variables.

### Course Outcomes

Upon successful completion of this course the student would be able to,

- Diagrammatically represent the data
- Applicate the various statistical tools for explanation

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )					
		CO					
PEO		1	2				
	i.						
ii.	<b>m</b>						
iii.	<b>s</b>	<b>s</b>					
iv.							

### UNIT I

Presentation of data by diagrammatic and graphical method - Formation of frequency distribution. Probability – Concept, Bayes“ theorem. Probability distributions - Binomial, Poisson and normal

### UNIT II

Measures of central tendency - Arithmetic mean, median, mode, geometric and harmonic mean, measures of variation and standard mean and quartile deviations - Skewness and Kurtoses

### UNIT III

Simple correlation - Scatter diagram - Karl Pearson“s Co-efficient of correlation – Rank correlation – Regression – Simple and multiple regression analysis - Regression lines

### UNIT IV

Sample design – Sampling theory and test of significance – Quality tools – DOE, ANOVA and Chi square test

### UNIT V

Analysis of Time Series: Methods of measuring - Trend and seasonal variations – Index number – Unweighted indices - Consumers price and cost of living indices.

**Note:** Theory and problem shall be distributed at 20% and 80% respectively.

**TEXT BOOKS:**

1. Das N G, "Statistical Methods", McGraw Hill Education, 1st Edition, 2008.
2. Goon A M, Gupta M K & Das Gupta B, "Fundamentals of Statistics" Vol I & II, The World Press P Ltd., 1968.
3. Miller & Freuntz, "Probability & Statistics for Engineers", Prentice Hall of India, 8th Edition, 2010.

**REFERENCES:**

1. Gupta S P, "Statistical Methods" S Chand & Sons, New Delhi, 44th Edition, 2014
2. Pillai R S N & Mrs. Bagavathi, "Statistics – Theory & Practice", S Chand Publishing,7th Edition, 1984
3. Leaf G A V, "Practical Statistics for the Textile Industry" Part I and II, Cornell University, 2009.

### Course Objective

- Study the woven preparatory and production techniques.
- Study the knitted and nonwoven fabric preparatory and production techniques

### Course Outcomes

Upon successful completion of this subject, the students should be able to:

- Understand the preparatory process for woven, knitted and nonwoven fabric production
- Explain the conventional and modern weaving and knitting systems
- Understand the various nonwoven and braiding techniques

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2			
i.						
ii.						
iii.	S	S				
iv.						

### UNIT I

**Weaving preparatory process:**— High speed winding machine - Pirn winding. Warping - warping machine – sectional warping machine. Sizing - ingredients – sizing machine. Drawing in – denting.

**Conventional Weaving:** Introduction – primary, secondary and auxiliary motions - passage of yarn – handloom - power loom. Selvedges – types.

### UNIT II

**Patterning mechanisms:** Lifting mechanism principles – tappet, dobby (climax, staubli) and jacquard. Drop box.

**Shuttleless Loom:** Introduction - weft inserting cycle - projectile, rapier, air jet, water jet - Multiphase weaving - Fabric defects, causes and remedies.

### UNIT III

**Weft knitting:** Comparison of weaving and knitting, weft and warp knitting – weft knitting classification - circular, flat, V-bed. Elements of weft knitting - needles, and their types, sinkers, jacks, cams, cylinder, feeder and take-up, their function and operation. Knitting terminologies - open loop, closed loop, course, wale, stitch density and loop length. knitting cycle and yarn path of single and double jersey

### UNIT IV

**Warp Knitting:** Detailed classification - tricot, raschel, simplex and 2 needles bar raschel machines, Mechanical elements of warp knitting. Needle bar, sinker bar, guide bar, warp beams, pattern wheel, chain links, knitting cycle for spring bearded and latch needles, yarn path in tricot and raschel machines, lapping diagrams and notations.

## UNIT V

**Nonwoven:** Introduction – classification. Web formation – dry (parallel, cross, random), wet and polymer laid. Web bonding – mechanical, chemical and thermal. Properties and applications. Braiding - flat and circular braiding machines – properties and applications.

### TEXT BOOKS:

1. Talukdar, M. K. (1982). An Introduction to Winding and Warping. Mumbai: Textile Trade Press.
2. Anbumani N, "Knitting-Fundamentals, Machines, Structures and Developments", New Age International (P) Ltd., New Delhi, 2007.

### REFERENCES:

1. Horrocks, A. R. & Anand, S. C. (2000). Handbook of Technical Textiles. Cambridge: Woodhead Publishing.
2. Vincent, J. J. (1980). Shuttleless Looms. Manchester: The Textile Institute.
3. Talavasek, O. & Svaty, V. (1981). Shuttleless Weaving Machines. Oxford: Elsevier Scientific Publishing Company.
4. Ormerod, A. (1983). Modern Preparation and Weaving Machinery. London: Butterworth's & Co.
5. Karthik, T., Prabha Karan, C., & Rathinamoorthy, R. (2016). Nonwovens: Process, Structure, Properties & Applications. 1st Edition. Woodhead Publishing India.
6. Spencer D J, "Knitting Technology", Textile Institute Publication, Manchester, UK, 3rd Edition, 2001

**COURSE OBJECTIVES:**

- To introduce briefly the fundamentals of apparel manufacture to the students
- To teach the students about types of seams and stitches, sewing threads & their quality.
- To impart knowledge on use of accessories for garments.
- To expose the students to various problems & remedies during garment manufacturing

**OUTCOMES:**

Upon completion of the course, the students will

- Able to know about types of seams and stitches, sewing threads & their quality.
- Able to know about use of accessories for garments
- Understand the fundamental aspects of production of garment and various processes involved

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2	3	4	
i.						
ii.	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>		
iii.		<b>m</b>				
iv.						

**UNIT I**

Introduction to Indian apparel industry; Anthropometry- definition and tools, Specification sheet, technical pack; Structure of an apparel industry-work flow, Pre production planning; types of samples and sample approval;

**UNIT II**

Basics of fabric spreading, modes of spreading, different fabric packages, spreading tension, uniformity and alignment, woven fabric lay, knitted fabric lay, types of fabric lay, Lay planning principles. Marker making, principles of marker making, types of markers, marker planning and marker efficiency, and fabric design parameters on markers, matching and grain line. Fabric cutting methods, latest fabric cutting equipments, and record keeping in cutting room, advancements in cutting room technology

**UNIT III**

Seams: Definition, Types of seams, seam quality, seam performance, factors to be considered in the selection of seam, seam finishes, seam defects. Stitches: Definition, stitch classes, stitch parameters, factors to be considered in the selection of stitches. Stitching defects. Sewing Thread: Types, construction, sewing thread quality, selection of sewing thread.

**UNIT IV**

Single needle lock stitch machine – over lock – flat lock machine - mechanism and accessories; needle – functions, special needles, needle size, numbering, needlepoint.

## **UNIT V**

Garment accessories, trims and components; fusing requirements and process; Objectives of pressing and packing- Suitable solutions for Sustainable Apparel production.

### **TEXT BOOKS:**

1. Carr H., and Latham B., “The Technology of Clothing Manufacture”, Blackwell Science Ltd., Oxford, 1994.
2. Gerry Cooklin, “Introduction to Clothing Manufacture” Blackwell Science Ltd., 1995.
3. Harrison.P.W Garment Dyeing, The Textile Institute Publication, Textile Progress, Vol .19 No.2,1988.

### **REFERENCES:**

1. Winifred Aldrich., “Metric Pattern Cutting”, Blackwell Science Ltd., Oxford, 1994
2. Peggal H., “The Complete Dress Maker”, Marshall Caverdish, London, 1985
3. Jai Prakash and Gaur R.K., “Sewing Thread”, NITRA, 1994
4. Ruth Glock, Grace I. Kunz, “Apparel Manufacturing”, Dorling Kindersley Publishing Inc., New Jersey, 1995.
5. Pradip V.Mehta, “An Introduction to Quality Control for the Apparel Industry”, J.S.N. Internationals, 1992.

## **22BSTX27 - ENVIRONMENTAL SCIENCE**

### **Course Objectives**

- To enable the students to understand the different types of pollution and its impact on environment
- To create awareness among the students about eco-systems, social issues and environmental pollution control legislations

### Course Outcomes

Upon successful completion of this course the student would be able to,

- Elaborate on the various natural resources
- Identify the various forms of pollution
- Know various social issues

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2			
		i.				
ii.						
iii.						
iv.		S	S			

### UNIT I

**Natural Resources:** Renewable and non-renewable resources - natural resources and associated problems - forest resources - water resources - mineral resources - food resources - energy resources - land resources - role of an individual in conservation of natural resources - equitable use of resources for sustainable lifestyles.

### UNIT II

**Ecosystems:** Concept of ecosystem - structure and function of an ecosystem – producers, consumers and decomposers - energy flow in the ecosystem - ecological succession - food chains, food webs and ecological pyramids.

### UNIT III

**Environmental Pollution:** Meaning and factors, types of environment pollution: air pollution, water pollution, noise pollution, industrial pollution - soil pollution - marine pollution - thermal pollution - nuclear hazards - role of an individual in prevention of pollution.

### UNIT IV

**Social issues:** from unsustainable to sustainable development - urban problems related to energy - water conservation, rain water harvesting, watershed management - resettlement and rehabilitation of people; its problems and concerns - environmental ethics : issues and possible solutions - climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust.

## **UNIT V**

**Environment Protection act:** Environment protection act - air (prevention and control of pollution) act - water (prevention and control of pollution) act - wildlife protection act - forest conservation act - issues involved in enforcement of environmental legislation - public awareness.

### **TEXTBOOKS:**

1. Benny Joseph, „Environmental Science and Engineering“, Tata McGraw-Hill, New Delhi, 2006.
2. Gilbert M.Masters, „Introduction to Environmental Engineering and Science“, 2nd edition, Pearson Education, 2004.

### **REFERENCES:**

1. Dharmendra S. Sengar, „Environmental law“, Prentice hall of India Pvt Ltd, New Delhi, 2007.
2. Erach Bharucha, “Textbook of Environmental Studies”, Universities Press(I) Pvt, Ltd, Hyderabad, 2015.
3. G. Tyler Miller and Scott E. Spoolman, “Environmental Science”, Cengage Learning India PVT, LTD, Delhi, 2014.
4. Rajagopalan, R, „Environmental Studies-From Crisis to Cure“, Oxford University Press, 2005.

## **22BSTX28 – FASHION ILLUSTRATION LABORATORY**

### **Course Objectives**

- Understand the basic concepts of human anatomy.
- Develop skills in fashion arts and create innovative designs.

- Developing design and improvisation of basics fashion rendering.

### Course Outcomes

Upon successful completion of this subject, the students should be able to:

- Inculcate excellent illustration skill.
- Develop effective design communication skill.
- Visually interpret other people's ideas.
- The capability to be flexible and adapt to change when requested.

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2	3		
i.						
ii.	<b>S</b>	<b>S</b>	<b>S</b>			
iii.		<b>m</b>				
iv.						

### LIST OF EXPERIMENTS:

1. Illustration of human anatomy
2. Illustrate different growth stages of male and female
3. Illustrate fashion Croquis – male and female
4. Illustrate Facial features – Eyes, Nose, Lips & Ears
5. Illustrate different men's and women's face shapes
6. Illustrate front and side face with features for men and women
7. Development of flesh figure from stick figure
8. Illustrate different hand and leg poses
9. Illustration of different styles of skirts, pants, waist band and pocket
10. Illustration of different hair styles
11. Illustration of different styles of sleeves, cuff, neckline, yoke, collars
12. Illustration of different kinds of accessories and designs
13. Illustrating of trimmings and decorations
14. Illustrating face make up with reference to prevailing fashion

### REFERENCES:

1. Abling, Bina. (2012). Fashion Sketchbook. 6th Edition. New York: Fairchild Book Publications.
2. Davis, Marian. L. (1996). Visual Design in Dress. 3rd Edition. New Jersey: Prentice Hall Inc.

3. Gillow, John. & Barnard, Nicholas. (2008). Indian Textiles. Reprint edition. Thames & Hudson Ltd.
4. Bhargav, Ritu. (2005). Fashion Illustration and Rendering. 1st Edition. New Delhi: B Jain Publication Pvt. Ltd.
5. Morris, Bethan. (2006). Fashion Illustrator, New Delhi: Laurence King Publishing.
6. Ireland, Patrick John. (1996). Fashion Design Illustration: Men. UK: Pavilion Books.
7. Ireland, Patrick John. (2003). Fashion Design Drawing and Presentation. Batsford Publishers.
8. Wayne, Childy. (2009). Essential Fashion Illustration: Men. Beverly, Massachusetts: Rockport Publishers.

## **22BSTX29 – FABRIC MANUFACTURING LABORATORY**

### **Course Objectives**

- To study the operating mechanism of the weaving machine.

- To study the operating mechanism of the knitting and braiding machine

### Course Outcomes

Upon successful completion of this subject, the students should be able to:

- Understand the yarn passage in weaving machine
- Understand the yarn passage in knitting machine
- Understand the yarn passage in braiding machine

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2			
		i.	<b>S</b>			
ii.						
iii.	<b>S</b>					
iv.						

### LIST OF EXPERIMENTS

1. Study of material passage in loom
2. Study of negative shedding mechanism in loom: Tappet/Climax
3. Study of picking and beat up mechanism in power loom
4. Study of let-off and take up mechanism in loom
5. Study of single cylinder single lift jacquard mechanism in loom
6. Study of Single jersey knitting machine.
7. Study of Interlock knitting machine
8. Study of Rib knitting machine
9. Study the passage of material in braiding machine

### REFERENCES:

1. Grosicki, Z. J. (2004). Watson's Textile Design and Colour-elementary Weaves and Figured Fabrics. 7th Edition. England: Woodhead Publishing Ltd.
2. Talukdar, M. K. (1982). An Introduction to Winding and Warping. Mumbai: Textile Trade Press.
3. Anbumani N, "Knitting-Fundamentals, Machines, Structures and Developments", New Age International (P) Ltd., New Delhi, 2007.
4. Spencer D J, "Knitting Technology", Textile Institute Publication, Manchester, UK, 3rd Edition, 2001

## 22BSUG20 – YOGA FOR HUMAN EXCELLENCE

### Course Objectives

- To know about the importance of Physical Exercises, yogasana and meditation
- To empower the students with knowledge about the mind and its functions

### Course outcomes

Upon successful completion of this subject, the students should be able to:

- Develop good physical and mental strength
- Live a stress free and balanced lifestyle

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2			
i.						
ii.						
iii.						
iv.		S	S			

### UNIT I: Yoga Types

Types of yoga – karma yoga – bhakthi yoga – raja yoga – gnana yoga – hata yoga. agna- santhi – clearence – thuriya – thuriyattheetham.

### UNIT II: Yogasana, Varma Art and Naturopathy

Padmasana, halasana, vajrasana, sukasana, chakrasana (side posture), viruchasana, bhujangasana, yoga mudra, ustrasana, maha mudra, vakkarasana. art of varma – philosophy of varma – practices – benefits – methods of naturopathy.

### UNIT III: Simplified Physical Exercises

Physical exercises – hand exercises – leg exercises – breathing exercises – eye exercises – kapalabathi – makarasana – body massage – acupressure – relaxation science and total consciousness – integrated approach.

### UNIT IV: Personality Development

Introspection – analysis of thoughts – moralization of desire – neutralization of anger – eradication of worries – benefits of blessing.

### UNIT V: Life lessons

Divine thoughts of Bharathiar – Concepts of Ramalinga Vallalar Vethathirian principles – Practical solutions of Vethathirian philosophy.

**TEXT BOOK:**

1. "Simplified Physical Exercises", by Vedhathiri Maharishi Pathipagam, 180, Gadhiji Road, Erode – 638001.

**REFERENCES:**

1. "Yoga its Basis and Applications" – H.R Nagendra, S-VYASSA publications.
2. "New perspective in stress Management (SMET)", S-VYASSA publications.
3. "My Life History", Thathuvagnani Vethathiri Maharishi, 180, Gadhiji Road, Erode
4. "Patanjali's Yoga Sutras", S-VYASSA publications.
5. "Yoga – Breathing Practices", S-VYASSA publications.

**SEMESTER III**  
**22BSTX31 – FABRIC STRUCTURE AND ANALYSIS**

**COURSE OBJECTIVE**

- To enable the students to learn about structure of fabric and design the structure for different applications.

**COURSE OUTCOMES**

Upon the completion of this course the student will be able to

- Understand different structures of woven and knitted fabric
- Design the structure for different end uses
- Construct the draft and peg-plan which are required to convert the design into fabric

MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )					
CO					
PEO	1				
i.					
ii.					
iii.	<b>S</b>				
iv.					

**UNIT I**

Elementary weaves – plain and its derivatives, twill and its derivatives, satin, sateen and their derivatives – loom requirements

**UNIT II**

Ordinary and Brighten Honey Comb; Huck-a-Back and its modifications; Mock Leno; crepe weaves; colour and weave effects – loom requirements

**UNIT III**

Bedford cords - plain and twill faced, wadded; welts and piques, wadded piques; backed fabrics - warp and weft, reversible and non-reversible fabrics; extra warp and extra weft figuring – single and double colour – loom requirements

**UNIT IV**

Pile fabrics; warp pile - wire pile, terry pile, loose backed; weft pile – plain back and twill back velveteen, lashed pile, corduroy, weft plush – loom requirements. Double cloth, types of stitches; Damasks; Gauze and Leno principles – loom requirements, 3D woven structures.

## **UNIT V**

Weft Knit Structures: Needle loop, sinker loop, technical face, technical back, open loop, closed loop, knit stitch, tuck stitch, purl stitch, miss stitch - single jersey, rib, purl and interlock, their structures and fabric characteristics. Flat knitting Basic structures- Cardigan, Racked Rib and Cable stitch. Warp knitted fabric Standard Structures.

### **TEXT BOOKS**

1. Grosicki, Z. J. (2004). Watson's Textile Design and Colour-elementary Weaves and Figured Fabrics. 7th Edition. England: Woodhead Publishing Ltd.
2. Anbumani N, "Knitting-Fundamentals, Machines, Structures and Developments", New Age International (P) Ltd., New Delhi, 2007.

### **REFERENCES:**

1. Talukdar, M. K. (1982). An Introduction to Winding and Warping. Mumbai: Textile Trade Press.
2. Spencer D J, "Knitting Technology", Textile Institute Publication, Manchester, UK, 3rd Edition, 2001

## 22BSTX32 – PATTERN ENGINEERING

### COURSE OBJECTIVE

- To impart knowledge on work room terms and practices, measurements, Block preparation, Dart manipulation and drafting method for various components and garments, Draping and grading.

### COURSE OUTCOMES

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

- Describe the various pattern making tools in the workroom and the measuring techniques
- Explain the method of drafting basic body slopers and dart manipulation techniques
- Describe the pattern drafting for sleeves, collars, yokes and cuffs
- Draft block patterns for basic men's and women's garments
- Explain the basic principles of grading and draping

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO	1					
	i.					
	ii.	<b>S</b>				
	iii.					
	iv.					

### Unit -I Measurements and Workroom Practices

Flow chart of garment manufacturing Pattern: Definition, Importance, Types: basic pattern, working pattern and production pattern; Pattern making: Definition, Techniques: drafting and draping; Pattern making tools and workroom terms and definitions. Industrial and bespoke patterns. Figure analysis: Head theory: Seven and Half and Eight. Measuring techniques: Introduction; Standard Measurement charts for male, female and kids, Body measurements: circumference measurement, Vertical measurements and horizontal measurements and measuring the form.

### Unit -II Block preparation and Dart manipulation

Drafting of basic bodice, Skirt blocks and sleeve Dart manipulation: Pivotal method, Slash and spread method, Designing with darts, Tucks, Pleats, Flares, Gathers and Style lines, ease allowances, influence of allowances on garment fit.

### Unit -III Sleeves and Collars

Sleeves: Set-in-sleeves: Plain, Puff, Bell, Bishop, Circular and Leg-o-mutton; Sleeves combined with bodice: Kimono, Dolman and Raglan. Collars: Convertible, Shirt, Mandarin, Peter pan, Cape, Square, Scalloped, Sailor, Puritan, Shawl, and Notch collar. Cuff: Shirt cuff, French cuff and Contoured cuff. Yokes: Preparing patterns for yokes: Partial, Yoke without fullness, Yoke with fullness and Yoke supporting or releasing fullness.

#### **Unit -IV Drafting for Garments**

Drafting: Basic principles and methodologies used to draft block patterns for the following garments: Shirt, Trouser, Skirt, Blouse and Nightwear. Pattern alterations: Importance, Principles and pattern alterations for blouse and trouser. Computer applications in pattern making: Fundamentals of pattern making, grading and marker planning using CAD.

#### **Unit -V Grading and Draping**

Grading: Principles of pattern grading, Types: Draft grading: Two dimensional and Three dimensional grading, Track grading; Grading of basic back, Basic front, Basic sleeve and Basic collar. Draping: Introduction, Importance, Preparation of dress forms, Preparation of muslin for draping; Draping for bodice, sleeve and skirt, Advantages and disadvantages.

#### **TEXT BOOKS**

1. Halen Josep Armstrong “Pattern Making for Fashion Design” 5 th Edition, Prentice Hall, New Jersey , 2014.
2. Claire Schaeffer, “The Complete Book of Sewing Shortcuts”, Sterling Publishing(NY), 2009.

#### **REFERENCE BOOKS**

1. Winifred Aldrich, “Pattern Cutting for Menswear”, 4th edition, Blackwell Science Publisher, USA, 2006.
2. Winifred Aldrich, “Metric Pattern Cutting”, Om Book Service, 1997.
3. Gerry Cooklin, “Master Patterns and Grading for Women’s Outsize”, Blackwell Scientific Publications,1995.
4. Gerry Cooklin, “Master Patterns and Grading for Men’s Outsize”, Blackwell Science Publications, 1992.
5. Helen Joseph Armstrong, “Draping for Apparel Design” , Fairchild Publications, Newyork, 2000.

## 22BSTX33 – APPAREL MANUFACTURING - II

### Course Objectives

- To upgrade the knowledge in the field of basic garment designing
- To study the various garment design details

### Course Outcomes

Upon successful completion of this course the student would be able to,

- Identify the various parts of a sewing machine
- Differentiate the various parts of a garment
- Create varieties of garment designs and styles.

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO	1	2				
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ii.	<b>S</b>	<b>S</b>				
iii.		<b>m</b>				
iv.						

### UNIT I

**Preparation of Fabric for Cutting:** Importance of grain - steps in preparing the fabrics for cutting – laying – marking – cutting - bundling - labelling.

**Fullness:** Types, application and construction of darts, tucks, pleats, gathers and shirrs, frills or ruffles, flares, godets and flounces – neckline finishes – binding and facing.

**Fit:** Standard for a good fit, fit analysis, solving the fitting problems - pattern alteration and its principles.

### UNIT II

**Trims and accessories:** Difference between trims and accessories – classification.

**Plackets:** characteristics of good placket, types, selection and method of construction.

**Fasteners:** Classification - button and buttonhole, button and loop, press buttons, eye lets and cords, hook and eye, zippers and velcro.

### UNIT III

**Collar:** Classification – selection – construction: peter pan, flat, partial roll, full roll, cape, puritan, rippled, scalloped, flared, sailor, square, stand, shirt and shawl.

**Yokes:** Classification – selection – creating varieties - construction.

**Pocket:** Classification – selection – creating varieties – construction.

## **UNIT IV**

**Sleeves:** Set in sleeves (Plain, puff, bell, circular, bishop, leg - o - mutton,) - sleeve combined with bodice (raglon), modified armhole (cap and magyar), sleeveless (kimono, dolman and batwing).

**Cuff:** Classification – selection – creating varieties - construction

## **UNIT V**

Operation breakdown for shirts, trousers, casual bottoms, skirt variations, kameez and salwar - material flow, cut component progresses, machinery allocation, man power allocation.

### **TEXT BOOKS:**

1. Solinger, Jacob. (1998). Apparel Production Handbook - Analysis, Principles and Practice. New York: Van Nostrand Reinhold Company.
2. Carr, Harold. & Latham, Barbara. (1994). The Technology of Clothing Manufacturing. U.K: Blackwell Science.

### **REFERENCES:**

1. Laing, R. M. & Webster, J. (1998). Stitches & Seams. India: The Textile Institute.
2. Shaeffer, Claire. (2001). Sewing for the Apparel Industry. New Jersey: Prentice Hall.
3. Singer. (1991). Sewing Lingerie. Cy De Cosse Incorporated.
4. Brown, Patty. & Rice, Janett. (2000). Ready-To-Wear Apparel Analysis. 3rd Edition, New Jersey: Prentice Hall Inc.
5. Zarapkar, K. R. (2011). Zarapkar System of Cutting. India: Navneet Education India Ltd.
6. Mathews, Mary. (1986). Practical clothing construction, Part I and II, Chennai: Cosmic Press.

## Course objectives

- To acquaint students with basic concepts related time series, sampling, scaling and data collection techniques.
- To acquaint students to analyses the data using statistical tools.
- To acquire the practical knowledge of analysis of data through EXCEL and SPSS.

## Course outcomes

On successful completion of the course, students will be able to:

- Know the practical issues arising in sampling studies.
- Appropriately interpret results of analysis of variance tests
- Design experiments, carry them out, and analyze the data they yield.
- Preparation of project report

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO		1	2	3		
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ii.						
iii.						
iv.		<b>S</b>	<b>S</b>	<b>S</b>		

## UNIT – I

Concept of time series – Source of time series data – Component of time series – Additive and Multiplicative models – Resolving the components of time series –Trend – Methods of measuring trend

## UNIT – II

Sampling design – Census and sample survey – Implication of sample design – Sampling procedure – Characteristic – Types – Measurement and Scaling techniques - Measurement of scales – Scaling – Scale classification bases - Scale construction techniques – Methods of data collection – Primary and secondary data - Observation, interview, survey- data classification and tabulation-Case study method

## UNIT – II

Data Analysis: Hypothesis testing-Introduction, procedure, one tail, two tail tests-Tests involving population mean-Errors in hypothesis testing- Chi square test- One way ANOVA – Non parametric tests- multiple correlation and regression.

## UNIT – IV

**Through EXCEL:**

1. Mathematical functions ( SUM ( ), MAX ( ), MIN ( ), COUNT ( ), AVERAGE ( ) combining basic function(MAX,MIN)
2. Illustrate year-wise performance of sales, purchase, profit of company by using chart wizard.
3. Aggregation Functions ( SUM IF, COUNT IF)
4. Regression Analysis ( FORECAST and TREND)
5. Mini Project – Apply necessary Excel tools to analyse textile database

**Through SPSS:**

1. Functions of Statistics (Classification, Diagrams and Graphical representation of Data)
2. Descriptive Statistics
3. Calculation of Probabilities under various distributions
4. Correlation & Regression – Partial and Multiple Correlations, Multiple Regression
5. Confidence Intervals for mean, variance, proportions
6. Inferential Statistics for Single through multiple samples. (Chi – Square, t, f and z test)
7. Non – Parametric tests.
8. Experimental Design: One way ANOVA, Two way ANOVA – Factorial designs – Multiple comparison tests
9. Mini Project – Apply necessary tools to analyze textile database

**UNIT – V**

Project report preparation and interpretation- steps in writing report-types of report

**NOTE: Class: 50% theory and 50% practical****REFERENCES:**

1. A.M.Goon M.K.Gupta and B.Das Gupta (1994), Fundamentals of Statistics V-II, The world press Ltd., Culcutta.
2. Croxton : Applied General Statistics.
3. S.C.Gupta, V.K.Kapoor, (2007):Fundamentals of Applied Statistics, Sultan Chand & Sons, New Delhi
4. VK Kapoor and SC Gupta, (1986): Fundamentals of Mathematical Statistics, Sultan Chand and sons, New Delhi
5. Hoel P.G. (1957): Introduction to Statistics, Asia Publishing Housing Pvt Ltd, New Delhi
6. Using Excel for Business Analysis - Danielle Stein Fairhurst, WILY.
7. C. P. Kothari, “ research Methodology” New age International-2013

### Course Objectives

- To learn the procedure for obtaining measurements and measurement chart preparation
- To draft the basic bodice for various garments

### Course Outcomes

Upon successful completion of this course the student would be able to,

- Obtain various body measurements and to prepare measurement chart
- Draft the basic pattern from the obtained measurements

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO		1	2			
i.						
ii.	<b>S</b>	<b>S</b>				
iii.		<b>m</b>				
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### LIST OF EXPERIMENTS:

1. Measuring the form – Male, female and child.
2. Drafting the basic pattern set of bodice and sleeve using the standard measurements.
3. Drafting the basic pattern of skirt and trouser using the standard measurements.
4. Drafting the patterns for the following components:
  - a) Sleeve
    - i. Plain
    - ii. Puff sleeve
    - iii. Bell sleeve
    - iv. Raglon
  - b) Collar
    - i. Peter pan
    - ii. Stand
    - iii. Shirt
  - c) Yoke
    - i. Partial yoke
    - ii. Yoke with fullness
5. Designing, drafting and grading for children's wear
  - i. Baby frock
  - ii. Rompers
  - iii. Round neck T-Shirt

### REFERENCES:

1. Armstrong, Helen. J. (2011). Patternmaking for Fashion Design. 5th Edition. Pearson Education Pvt. Ltd.
2. Aldrich, Winifred. (2012). Metric pattern cutting for children's wear and baby wear. 4th Edition. John Wiley and Sons.
3. Cooklin, Gerry. (1995). Master patterns & grading for women's outsize. 1st Edition. Wiley - Blackwell Publications.
4. Bray, Natalie. (2003). More dress pattern designing. 4th Edition. Wiley - Blackwell Publication.

## 22BSTX37 – GARMENT CONSTRUCTION LABORATORY – I

### Course Objectives

- Prepare samples for various types of stitches.
- Prepare samples for fullness, plackets, zippers, collars, pockets, sleeves and yokes.

### Course Outcomes

Upon successful completion of this course the student would be able to,

- Identify and explain the parts and functions of a sewing machine.
- Prepare various samples for stitching.
- Categorize various attachments for enhancing the garment value.

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO		1	2			
i.						
ii.	<b>S</b>	<b>S</b>				
iii.		<b>m</b>				
iv.						

### LIST OF EXPERIMENTS:

1. Study on parts and functions of sewing machine
2. Prepare samples for hand stitches

**A) Temporary stitches:** even basting, uneven basting, diagonal basting and slip basting.

**B) Permanent stitches:** running, hemming, run and back stitch, over casting, overhanding and whipping.

3. Prepare samples for seams and seam finishes

**A) Seams:** plain, single top stitch, double top stitch, welt, lapped, slot, flat fell, french, hemmed flat fell, mantua maker's and piped seam.

**B) Seam Finishes:** pinked, double stitch, edge stitch, herring bone, bound seam edge finish and overcast finish.

4. Preparation of samples for Fullness (darts, tucks, pleats, flares, godets, gathers and shirrs, frills and ruffles).

5. Prepare samples for facings and bindings in necklines- bias, shaped and decorative.

6. Prepare samples of plackets – Continuous bound placket, 2-piece placket, tailor placket, fly opening and zipper

7. Prepare samples of collars – PETER pan collar, shirt collar and stand collar

8. Prepare samples of pockets – Patch, set in seam and set in slot

9. Prepare samples of sleeves – Plain, puff, raglon and kimono

10. Prepare samples of yokes – Partial yoke, yoke with fullness

11. Prepare samples of fasteners – Zipper, hook and eye
12. Prepare samples of trimmings and decorations

**REFERENCES:**

1. Mathews, Mary. Practical clothing construction Part -I Basic Sewing Processes. (No Year and Publication)
2. Mathews, Mary. Practical clothing construction Part-II Designing, Drafting and Tailoring. (No Year and Publication)
3. Zarapkar, K. R. (2011). System of Cutting. India: Navneet Publications.
4. Laing, R. M., Webster, J. (1998). Stitches & Seams. India: The Textile Institute.
5. Claire, B. Shaeffer. (2012). Sewing for the Apparel Industry. Vol. 978. 2nd Edition. India: Pearson Publishers.
6. Cooklin, Gerry., Hayes, Steven. G., McLoughlin, John., Fairclough, Dorothy. (2012). Cooklin's Garment Technology for Fashion Designers. John Wiley & Sons.
7. Knight, Lorna. (2010). 200 Sewing Tips, Techniques and Trade Secrets. Griffin: St. Martin's Press.
8. Hosegood, Besty. (2006). The Complete Book of Sewing. London: Dorling Kindersley Ltd.

## 22BSTX38 – FABRIC STRUCTURE AND ANALYSIS LABORATORY

### OBJECTIVE:

- To train the students in analyzing the cloth to identify construction parameters and prepare design, draft and peg plan.

### OUTCOMES:

Upon completion of the lab the student will be able

- Identify the constructional parameters of fabric
- Construct design, draft and peg plan for weaving the fabric
- Analyse the blend composition of yarn used in the fabric and the type of finish applied in the fabric

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO	1					
	i.					
	ii.					
	iii.	S				
	iv.					

### LIST OF EXPERIMENTS:

#### Analysis of construction details of the following fabric structure

1. Woven fabric
  - Plain
  - Twill
  - Satin ( Regular and irregular)
  - Sateen( Regular and irregular)
  - Honeycomb (ordinary and Brighton)
  - Huck-a-back
  - Extra warp and extra weft figuring
  - Pile fabrics (warp / weft)
    - Gauze and Leno
    - Double cloth
    - Mock-leno
    - Bedford cord.
2. Knitted fabric
  - Single jersey
  - Double jersey structures

**REFERENCES:**

1. Grosicki, Z. J. (2004). Watson's Textile Design and Colour-elementary Weaves and Figured Fabrics. 7th Edition. England: Woodhead Publishing Ltd.
2. Talukdar, M. K. (1982). An Introduction to Winding and Warping. Mumbai: Textile Trade Press.
3. Anbumani N, "Knitting-Fundamentals, Machines, Structures and Developments", New Age International (P) Ltd., New Delhi, 2007.
4. Spencer D J, "Knitting Technology", Textile Institute Publication, Manchester, UK, 3rd Edition, 2001

## **22BSUG30 – INTERNSHIP – I**

### **Course Objectives**

- To expose the students in the real time world
- To gain knowledge on the process, machinery and technology

### **Course Outcomes**

After successful completion of this course, the students should be able to

- Identify the solution for industry related problems
- Understand the suitable process, machinery and technology for product manufacturing
- Summarize the results and submit a report.

### **Pre-requisites:**

Students will undergo internship training in an established organization of Textile / Apparel / Retail for a period of 3 weeks.

- At the end of internship training, students will submit a report of training undertaken.
- The student has to present their report to the Panel of members for evaluation.

**SEMESTER IV**  
**22BSTX41 – TEXTILE AND APPAREL CHEMICAL PROCESSING**

**Course Objectives**

- To understand the need for fabric preparation in wet processing
- To understand the classification of dyes and application for textile materials.
- To recognize the different methods and machinery for textile processing.

**Course Outcomes**

Upon successful completion of this subject, the students should be able to:

- Identify the preparatory process suitable for different textile materials
- Understand the concepts of coloration of textile materials
- Gain knowledge on textile finishing and pollution control

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO		1	2	3		
		i.	<b>S</b>	<b>M</b>		
ii.						
iii.	<b>S</b>					
iv.						

**UNIT I**

**Preparatory Processes:** Introduction- water quality requirements – impurities in greige fabric. Objectives and types : shearing / cropping, desizing, singeing, scouring, bleaching and mercerization. Wet processing sequence of cotton, silk, wool, viscose, polyester, nylon and polyester / cotton blends.

**UNIT II**

**Dyeing:** Introduction - objectives - basic classification of dyes - selection of dyes - dyeing methods – mechanism - factors influencing the dyeing process. Types of dyeing machine – hank and yarn package, jigger, winch, j-box, jet, soft flow, HTHP, padding mangle and garment dyeing.

**UNIT III**

**Printing:** Introduction - difference between dyeing and printing- essential ingredients for printing paste - methods of printing: stencil - hand block- screen: hand, flat bed, rotary and roller - heat transfer - digital or inkjet. Styles of prints: direct, discharge, resist, pigment, blotch, flock, burn-out and duplex.

## **UNIT IV**

**Finishing:** Introduction – classification - calendering, sanforizing (0/0) / anti-shrink finishing, stentering, compacting, flame retardant, soil release, anti-static, enzyme wash, ultra-violet protection, insect resist, water proof, water repellent, bio polishing, stone wash and antimicrobial. Basic techniques and application of Micro-encapsulation, plasma and nanotechnology.

## **UNIT V**

**Pollution Control:** Introduction - types and causes of pollution – determination of BOD, COD, TDS - waste water treatment methods – primary, secondary and tertiary treatment - zero liquid discharge.

### **TEXTBOOKS:**

1. Shenai, V. A. (1995). Technology of Textile Processing. Vol. III Technology of Bleaching and Mercerising. Mumbai: Sevak Publications.
2. Walters, A., Santillo, D. & Johnston, P. (2005). An Overview of Textiles Processing and Related Environmental Concerns. UK: University of Exeter.
3. Shenai, V. A. (2000). Technology of Dyeing. Mumbai: Sevak Publications.
4. Shenai, V. A. (1999). Technology of Printing. Mumbai: Sevak Publications.
5. Schindler, W. D. & Hauser, P. J. (2004). Chemical Finishing of Textiles. England: Woodhead Publishing Ltd.

### **REFERENCES:**

1. Shore, J. (1998). Blend Dyeing. London: Society of Dyers Colourists.
2. Shenai, V. A. (1995). Introduction to the Chemistry of Dyestuffs. Mumbai: Sevak Publications.
3. Mittal, R. M. & Trivedi, S. S. (1983). Chemical Processing of Polyester / Cellulosic Blends. Ahmedabad Textile Industries Research Association.
4. Shenai, V. A. (2003). Technology of Textile Finishing. Mumbai: Sevak Publications.
5. Parmer, M. S., Satsangi, S. S. & Jai Prakash (1996). Denim – A Fabric for All. Northern India Textile Research Association.
6. Perkins, W. S. (1996). Textile Colouration and Finishing. England: Woodhead Publishing Ltd.
7. Skelley, J. K. (2003). Water Recycling in Textile Wet Processing. England: Woodhead Publishing Ltd.
8. Rao, J. V. (2006). Denim Washing. Ghaziabad: Northern India Textile Research Association.

- To make the student understand how business information systems assist textile and apparel organizations
- To determine the importance of using MIS for effective management

### Course Outcomes

Upon successful completion of this subject, the students should be able to:

- Apply MIS for effective management
- List the various components for MIS

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2			
		i.				
ii.	<b>S</b>					
iii.						
iv.	<b>m</b>	<b>s</b>				

### UNIT I

Computes and Information processing - classification of computers - main frames - mini computers - workstations - microcomputers - super computers - personal computers - computer - hardware and software - input devices - output devices – primary and secondary storage - magnetic disk storage - magnetic tape storage - optical disk storage - data representation in computers

### UNIT II

Definition of management information system - structure of MIS - information system for decision making - data base management system.

### UNIT III

System Development Methodologies – SDLC - system analysis - the role of system analyst - system planning and the mutual investigation - information gathering MIS organization - top management

### UNIT IV

Management and MIS - strategic information system - MIS as competitive advantage - implications for managers - MIS support for planning, organizing, operating, controlling an knowledge work - specific function - finance - personnel - production - materials - marketing - batch processing Vs. online processing.

### UNIT V

Decision support system - definition - examples of DSS - components - building DSS - Group Decision Support System - GDSS tools - Role of GDSS - executive system - benefits - examples.

**TEXT BOOKS:**

1. Gordan, B. Davis. (1984). Management Information System. 2nd Edition. New York: McGraw Hill Inc.
2. Sadagopan, S. (2005). Management Information System. India: Prentice Hall.
3. Mudrick, G. Robert, Joel E. Ross & James, R. Clagett. (1977). Management Information Systems. 1st Edition. PrenticeHall.

**REFERENCES:**

1. Rajagopalan,S.P. Management Information System. Chennai: Margham Publications.
2. Gordon Bitter Davis. (1973). Computer Data Processing. 2nd Edition. McGraw-Hill.
3. Kenneth, C. Laudon & Jane, P. Laudon. (2014). Management Information Systems. 12th Edition. Prentice-Hall.

**22BSTX43 – INDUSTRIAL ENGINEERING IN APPREL INDUSTRY**

**Course Objectives**

- To impart knowledge on work study methods in apparel production.
- To utilize the various Industrial Engineering techniques in Garment manufacturing process.
- To understand the Material movement in the apparel manufacturing process.

### Course Outcomes

Upon successful completion of this course the student would be able to,

- Select appropriate Process route and Technique to minimize the cost of production.
- Understand the process flow and their importance in machine planning and time control for every process.

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2	3		
		i.		<b>m</b>		
ii.						
iii.	<b>s</b>	<b>s</b>	<b>s</b>			
iv.	<b>m</b>					

### UNIT I

**Industrial Engineering:** Concepts, functions and applications - Fundamentals of industrial engineering – operations analysis and design, operations control and management; productivity concept and importance, factors affecting productivity, kinds of productivity measures, Total productivity management.

### UNIT II

**Organisation and Plant Layout:** Concepts, elements, importance, process and characteristics of organisation; organisational theories; organisational structure in the apparel industry; departmentation and delegation of authority in the apparel industry; concepts and factors governing plant location; plant layout – methods, procedure and types with respect to the apparel industry; facility services like air, water, electricity, drainage; Computerised layout planning.

### UNIT III

**Material Handling:** Functions and principles, relationship to plant layout, types of material handling equipments, selection of material handling equipment for the various operations in the apparel industry; storage and warehousing: functions, objectives and principles

#### **UNIT IV**

**Time and motion study:** Definition and concepts, objectives of method study and work measurement for the apparel industry; method study procedure; flow process charts for the various processes in the apparel industry; flow diagram, string diagram, multiple activity chart, SIMO chart; motion economy; time study procedures, standard data required for time study, use of time study in wage incentive and collective bargaining; operator efficiency distributions – SAM. Allowances.

#### **UNIT V**

**Lean Manufacturing:** Introduction, Importance. 7 wastes of lean – Tools of lean – Push, Pull system of production. Introduction to lean concepts - 5S, Kaizen, Kanban, Takt time, Six sigma. Case studies related to lean manufacturing.

#### **TEXT BOOKS:**

1. Maurice,Johnson.(1995).“Introduction of Work Study”, Geneva: International Labour Organization.
2. RameshBabu,V.(2012).“Industrial Engineering Application in Apparel Production”. New Delhi: Woodhead Publishing India,
3. Solinger,Jacob.(1998). “Apparel Manufacturing Hand Book”.2nd Edition., Columbia: Bobbin Blenheim Media Corp,

#### **REFERENCES:**

1. Juan Carlo, Hiba. (1998). “Improving working conditions and productivity in the garment industry”. Geneva: International Labour Organization.

## **22BSTX44 – TEXTILE AND APPAREL QUALITY EVALUATION**

### **Course Objectives**

- To inculcate the knowledge of sampling, testing instruments and testing of textile and apparel materials.
- To inculcate the knowledge of inspection and quality control of apparel products.

### Course Outcomes

Upon successful completion of this course the student would be able to,

- Elaborate on the working principles of various apparatuses for textile testing
- Point out the importance of various instrument like KES and FAST
- Apply the various principles of lean manufacturing

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2			
		i.	<b>S</b>			
ii.						
iii.	<b>S</b>					
iv.						

### UNIT I

**Fibre Testing:** Fibre properties - Fibre length: Staple length Span length – Hand stapling method, Baer sorter, Fibro graph. Fibre trash analyzer. Fibre strength – Stelometer, Pressley tester. Fibre fineness: Airflow principle, Micronaire testers. Maturity. Moisture content - regain and RH % determination. Measurement of fibre crimp- HVI and AFIS.

### UNIT II

**Yarn Testing:** Numbering systems: Direct system, indirect system and yarn Count Determination, Twist and its measurement-Twist construction, principle of twist measurement for single- corded yarns. Tensile testing of yarn: Constant Rate of Elongation, Constant Rate of Loading and Constant Rate of Traverse, Lea strength tester - Factors influencing tensile testing of yarns, Tenacity, elongation% & CSP.

### UNIT III

**Fabric Testing:** EPI, PPI, strength: tensile, tearing and bursting - GSM, thickness, shrinkage, abrasion, crease recovery, pilling, stiffness, drapability, thermal resistance, air and water permeability, water repellency - Objective evaluation of fabric handle – KES and FAST systems.

### UNIT IV

**Apparel Testing:** Strength Testing: Loop and Knot Strength test for sewing threads – Seam Strength – Seam Slippage - Seam Severance – button strength – Snap - Zipper Strength. Spirality test for knitted garments - Evaluation of Interlinings Quality - Apparel Dimensional Stability Testing.

## UNIT V

**Fabric and Apparel Inspection:** Definition –stages of inspection: Raw material - In-process inspection - Final inspection - Types: Fabric inspection, 4-point system, 10-point system, 100% inspection, Zero inspection and Statistical sampling – AQL standards. Fabric defects – Pre-sewing defects - Sewing defects - Post sewing defects - causes and remedies.

### TEXT BOOKS:

1. Grover & Hamby. (1969). "Hand book of Textile Testing and quality Control". New Delhi: Wiley Eastern P Ltd.
2. Bhardwaj & Pradip V Mehta. (1998). "Managing Quality in Apparel Industry". New Delhi: New Age International Publishers.
3. Solinger, Jaccob. (1993). "Apparel Manufacturing Hand book", New Delhi: Prentice Hall of India.

### REFERENCES:

1. Pradip V Mehta. (1992). "An Introduction of Quality control for the Apparel Industry", New York: ASQC quality press, Marcel Dekker Inc.

### Course Objectives

- To learn the procedure for obtaining measurements and measurement chart preparation
- To draft the pattern for various adult garments

### Course Outcomes

Upon successful completion of this course the student would be able to,

- Obtain various body measurements and to prepare measurement chart
- Draft the basic pattern from the obtained measurements

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO	1	2				
	i.	<b>S</b>				
	ii.					
	iii.	<b>S</b>				
	iv.					

### LIST OF EXPERIMENTS:

#### OF EXPERIMENTS

1. Designing, drafting and grading for women's wear:

- Nightly
- Salwar and kameez
- Blouse
- Skirt and top

2. Developing pattern and grading for Men's wear

- Knicker
- Formal shirt
- Formal trouser

3. Draping:

- Basic bodice – Front and Back
- Cowl
- Yoke
- Collar
- Skirt

### REFERENCES:

1. Helen Joseph, Armstrong, "Patternmaking for Fashion Design", Pearson Education Pte. Ltd., 2005.
2. Martin M Shoben, Patrick J Taylor & Nelson Thomas, "Grading for the fashion Industry", LCFS Fashion Media revised edition, 2004.
3. Gerry Cooklin, "Pattern Grading for women's clothes", Black well science Ltd., U.K., 1990, 1991 & 1992.

## 22BSTX47 – GARMENT CONSTRUCTION LABORATORY – II

### Course Objectives

- To make the students understand the need for fabric preparation and different processes involved in the garment preparation
- To create a foundation for making the textile material suitable for garmenting, designs and increasing the market value

### Course Outcomes

Upon successful completion of this course the student would be able to,

- Gain practical skills on determination of the suitability of base materials suitable for value addition.
- Elaborate on the procedure for constructing various apparels

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO	1	2				
	i.					
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	iii.		M			
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### LIST OF EXPERIMENTS:

Designing, Drafting and constructing the following garments with the design features.

1. Children's apparel:
  - a. Bib and Jabla
  - b. Romper
  - c. A-line frock
2. Women's apparel
  - a. Skirt and top
  - b. Salwar
  - c. Kameez
  - d. Saree Blouse
3. Men's apparel
  - a. Shirt
  - b. Trouser
  - c. Waist coat

### REFERENCES:

1. Zarapkar, K.R., System of Cutting, Navneet Publications, India.
2. Mary Mathews, Practical clothing construction Part-I “Basic Sewing Processes”

3. Mary Mathews, Practical clothing construction Part-II “Designing, Drafting and Tailoring”
4. Winifred Aldrich (2009), “Metric Pattern Cutting for Children’s Wear and Baby Wear”, Wiley Blackwell Publications, UK, 4th Edition.
5. Padmavathi B, “Techniques of Drafting & Pattern Making, Garments for Kids & Adolescents”, Atlantic Publishers & Distributors P Ltd.
6. Anita Tyagi (2012), Handbook of fashion Technology, Sonali Publications, New Delhi.
7. Nancy J. S. Langdon and Sabine Pollehn (2010), Sewing Clothes Kid;s Love, Creative Publishing International Inc. USA.
8. Peg Couch (2011), Garment Construction: A Complete course on making clothing for fit and Fashion, Fox Chapel Publishing. USA.
9. Samantha Me Nes (2005), Baby Couture, K.P. Books, USA.

## 22BSTX48 – TEXTILE AND APPAREL CHEMICAL PROCESSING LABORATORY

### Course Objectives

- To understand the various preparatory and colouration process.
- To study the influence of various process parameters on preparatory and colouration process.
- To practice assessment methods to evaluate the outcome of preparatory and dyeing process.

### Course Outcomes

- To develop basic colouration skills which is essential for fashion designing.
- To develop the ability to precisely communicate colour requirements for various rendering

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO		1	2	3		
	i.		<b>S</b>	<b>M</b>		
ii.						
iii.	<b>S</b>					
iv.						

### LIST OF EXPERIMENTS:

1. Desizing and Scouring of cotton fabric and evaluation of its efficiency
2. Bleaching of cotton fabric using universal bleaching agent
3. Dyeing of cotton fabric with direct dyes
4. Dyeing of cotton fabric using Reactive dyes – a) Hot b) Cold.
5. Dyeing of polyester fabric using disperse dyes
6. Dyeing of silk yarn / fabric with acid dyes.
7. Dyeing of acrylic yarn / wool using basic dyes
8. Dyeing of cotton fabric using –Tie & dye techniques.
9. Printing of cotton fabric on direct style.
10. Batik/Block printing on cotton fabric
11. Printing of cotton fabric by stencil technique a) positive b) negative

### REFERENCES:

1. Shenai, V. A. (1995). Technology of Textile Processing - Vol. III Technology of Bleaching and Mercerising. Mumbai: Sevak Publications.
2. Shenai, V. A. (2000). Technology of Dyeing. Mumbai: Sevak Publications
3. Arora, A. (2011). Textbook of Dyes. New Delhi: Sonali Publications.
4. Kapoor, Seema. (2012). Dyeing of Textile material. New Delhi: Sonali Publication.

**SEMESTER V**  
**22BSTX51 – APPAREL MARKETING AND MERCHANDISING**

**Course Objectives**

- To understand the functions of merchandiser on production and retail perspective.
- To inculcate the knowledge of apparel product lines, development, pricing and sourcing.

**Course Outcomes**

Upon successful completion of this course the student would be able to,

- Develop the skill to analyze the functions, characteristics and requirements of a merchandiser.
- Diagnose the role of exporters, manufacturer, merchant exporter and job workers.
- Identify the suitable SCM procedure.

MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES					
(S - Strong, M-Medium )					
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PEO	1	2			
i.					
ii.	<b>S</b>				
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iv.	<b>m</b>	<b>s</b>			

**UNIT I**

**Merchandising:** Definition – functions - division - role and responsibilities. Types of buyers - communications with the buyers – awareness of current market trends – product development – tech pack analysis - order confirmation process. Export Merchandising. Classification of exporters: Manufacturer, Merchant, Job worker (CM/CMT). Introduction to buying house.

**UNIT II**

**Merchandiser's Role:** Proto type to production model – samples, types of samples, sampling procedures, production planning, vendor based rationalization, order placement, in-house and sub-contractor units. Approval: types of approval, approval procedure, buyer approval and organizational approval. Record maintenance. Vendor evaluation and rating.

**UNIT III**

**Marketing:** Fashion consumer typologies, Maslow's hierarchy of needs, 4 P's, SWOT analysis, marketing research process, importance of marketing. Marketing mix – pricing, product and brand distribution channels. Market size, structure and environment.

**UNIT IV**

**Marketing Research:** Definition, role in apparel business, use of research findings for marketing decisions and action plans. Marketing research techniques – translation of business and marketing

problems into research issues and design, survey design, data types and collection methods, sample design and statistical inference. Model building and analysis methods.

## **UNIT V**

**Sourcing:** Definition, types and methods of sourcing. Sourcing decision in practice – Bought out component.

**Supply Chain Management:** Introduction and benefits. Push/pull concepts. Supply Chain strategies. Use of barcoding and RFID. **Warehousing:** Introduction, types and importance.

### **TEXT BOOKS:**

1. Merchandising- Theory, Principles and Practice Grace I. Kunz II Edition, Fairchild Publications, Inc. New York. 2005
2. Fashion Marketing by Easey M(Ed), Blackwell Science 1994.
3. Jeremy A Rosenau & David Wilson, "Apparel Merchandising: the Line Starts Here", Fairchild Books, 3rd Edition, 2014.
4. Ruth E Glock & Grace I Kunz, "Apparel Manufacturing: Sewn Product Analysis", Pearson / Prentice Hall Inc. 4th Edition, 2005
5. Frances Harder, "Fashion for Profit", Harder Publication, 10th Edition, 2014.
6. Elaine Stone, Jean A Samples, "Fashion Merchandising", McGraw Hill, 5th Edition. 1990.

### **REFERENCES:**

1. Mike Easey. .March (2009)."Fashion marketing" 3rd Edition, Edited by, ISBN 13:978140539533.
2. Tim Jackson and David show (2009) Mastering Fashion marketing

## 22BSTX52 – INDUSTRIAL MANAGEMENT

### Course Objectives

- To acquaint the students with the basic nature of management, its process, tasks and responsibilities of a manager
- To introduce the basics of managerial functions like human resources, marketing, finance and production

### Course Outcome

Upon successful completion of this course the student would be able to,

- Elaborate on the HRM policies in an organization
- Provide examples on marketing using case studies
- Point out the functions of HR, Marketing, Finance and Production departments in an organization

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO		1	2			
		i.				
ii.						
iii.	<b>s</b>	<b>s</b>				
iv.	<b>m</b>					

### UNIT I

**Management:** Science, theory and practice - the evolution of management thoughts - management as art - management as profession - professionalization of management in India - functions of management - levels of management - case analysis.

### UNIT II

**Human Resource Management:** Introduction - HRM policies and roles - The importance of the human factor - HRM and its interaction with other functional areas - line and staff functions - role of HR manager - case analysis.

### UNIT III

**Marketing:** Concept of marketing and marketing management, marketing as a business process - marketing environment, marketing mix - relationship of marketing department with production, finance, purchase and human resource department - demand and market - concepts of consumer marketing, industrial marketing and services marketing – marketing research, demand and supply – price determination - case analysis.

#### **UNIT IV**

**Finance:** Introduction: Financial, management and cost accounting - accounting concepts and conventions - concept of finance and functions of financial management; objectives of the firm; time value of money and risk - return relationship - case analysis.

#### **UNIT V**

**Production:** Production planning and control: production systems, types of production, re-planning and control functions, relations with other departments, efficiency of production planning and control – scheduling – GANTT charts - case analysis.

#### **TEXT BOOKS:**

1. Tripathi,P.C.&Reddy,P.N.(2013),Principles of Management,5th Edition, JBA publishers, New Delhi.
2. Rao,V.S.P.(2000),Human Resource Management : Text&Cases,1st Edition, Excel Books, New Delhi.
3. Pandey I.M.(2010),Financial Management,10th Edition, Vikas Publishing House P. Ltd., Noida.

#### **REFERENCES:**

1. Chandrabose, D. (2012), Principles of Management and Administration, 2nd Edition, PHI Learning Pvt. Ltd., New Delhi.
2. Philip, Kotler., Keller, Koshy. & Jha. (2011), Marketing Management, 14th Edition, Pearson Education / Prentice Hall of India, New Delhi.
3. Pannerselvam, R. (2008). Production and Operations Management. 2nd Edition, Prentice Hall of India, New Delhi.

### **Course Objectives**

- To impart knowledge on defects and control systems.
- To impart knowledge on controls in knitted and woven fabric.
- To impart knowledge on process control in garment production process and its properties.

### **Course Outcomes**

Upon successful completion of this course the student would be able to,

- Defects and control systems
- Controls in knitted and woven fabric
- Process control in garment production process and its properties

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2	2		
i.						
ii.	<b>S</b>					
iii.						
iv.	<b>m</b>	<b>s</b>	<b>s</b>			

### **UNIT I**

Fabric Inspection systems, Fabric defects - major defects and minor defects, Statistical process control, Application of Control systems in fabric manufacturing.

### **UNIT II**

Process control in knitting - quality control of knitted fabrics, loop length control, common faults in knitted fabrics, control measures.

### **UNIT III**

Process control in weaving - fabric quality, on line process control, quality control and monitoring.

### **UNIT IV**

Process control - spreading, pattern making, cutting, process control in sewing, causes of damage to fabric during sewing, control of fusing and pressing operations, storage and packaging.

### **UNIT V**

Sewability of fabrics, strength properties of apparel, dimensional changes in apparel due to laundering, dry-cleaning, steaming and pressing, quality control in printing, embroidery, washing and other accessories.

**TEXT BOOKS:**

1. Abhijit Majumdar, Apurba Das, R. Alagirusamy and V. K. Kothari, “Process Control in Textile Manufacturing” , Woodhead Publishing, 2013.
2. Pradip V.Mehta, P. E. Satish, K. Bhardwaj, “Managing Quality in The Apparel Industry” , New Age International Private Limited Publishers, Delhi, 2006.

**REFERENCES:**

1. P. W. Harrison, “On-line Quality Control in Spinning and Weaving” , The Textile Institute, 1988.
2. Pradip V.Mehta, “An Introduction to Quality Control for the Apparel Industry” , J.S.N. Internationals, 1992.

## 22BSTX56 – TEXTILE AND APPAREL QUALITY EVALUATION LABORATORY

### Course Objectives

- To understand the working principles of various testing instruments meant for measuring the properties of fibre, yarn, fabrics and garments
- To know the working procedures of different testing instruments
- To analyze test reports and decide the process parameters

### Course Outcomes

Upon successful completion of this course the student would be able to,

- Gain knowledge on testing machinery, methods and standards for yarn and fabric.
- Develop analytical and interpretation skills.

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO	1	2	3			
	i.	S	M			
	ii.					
	iii.	S				
	iv.					

### LIST OF EXPERIMENTS:

1. Determination of fabric thickness and GSM.
2. Determination of fabric stiffness and crease recovery.
3. Determination of fabric pilling.
4. Determination of fabric tensile, tearing and bursting strength (any one).
5. Determination of colour fastness of given sample to washing and rubbing.
6. Determination of dimensional stability for the given sample.
7. Determination of drape of the given fabric.
8. Determination of fabric wicking property.
9. Analyze the given fabric sample and grade using 4-point and 10-point systems.
10. Analysis of Garment defects.

**REFERENCES:**

1. Saville B.P.(1999). "Physical Testing of Textiles".1st Edition. Woodhead Publishing
2. Grover & Hamby.(1969)."Hand book of Textile Testing and quality Control", New Delhi, Wiley Eastern.P Ltd.

## 22BSTX57 – COMPUTER AIDED GARMENT DESIGNING LABORATORY

### Course Objectives

- To enhance knowledge in motifs development using various designing software.
- To familiarize the students to design and develop dobby and jacquard designs.
- To improve soft skills in creating innovative designs.

### Course Outcomes

Upon successful completion of this course the student would be able to,

- Design motifs for print design using software
- Develop weave designs for dobby and jacquard using textile CAD software
- Draft a pattern and marker plan using garment CAD \

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO		1	2	3		
i.						
ii.	<b>S</b>	<b>S</b>	<b>S</b>			
iii.		<b>M</b>				
iv.						

### LIST OF EXPERIMENTS:

1. Designing of Motif.
2. Designing 2D silhouettes for Children's, Women's and Men's wear.
3. Development of motif for screen printing.
4. Pattern drafting and grading for Baby frock.
5. Pattern drafting, grading and marker plan for T- Shirt.
6. Pattern drafting, grading and marker plan for Formal shirt.
7. Pattern drafting, grading and marker plan for Trouser.
8. Pattern drafting, grading and marker plan for Skirt and Top's.
9. Pattern drafting, grading and marker plan for Blouse.
10. Pattern drafting, grading and marker plan for Women's Party wear.

Design Oriented Project.

### REFERENCES:

1. Groover, M. P. & Zimmer, E. W. (1998). CAD / CAM Computer Aided Design and Manufacturing. New Delhi: Prentice hall of India.
2. Bezant, C. E. & Horwood, Ellis. (1983). Computer Aided Design and Manufacture. England.
3. Aldrich, Winfred. (1994). CAD in Clothing and Textiles. USA: Blackwell science.
4. Taylor, P. (1990). Computers in Fashion Industry. Heinemann publications.

5. Buchanan & Grady, C. (1995). Automation in the Textile Industry from Fibres to Apparels. UK: The Textile Institute.
6. Donald, D. Voisinet. (1987). Computer Aided Drafting and Design – Concept and Application. McGraw Hill Education

## 22BSTX58 – FASHION PORTFOLIO LABORATORY

### Course Objectives

To describe the contents of the fashion portfolio

- To maintain a sketchbook that reflects student's creative process
- To do a portfolio project for standard and specialized fashion apparels
- To purchase a portfolio case based upon student's ideals for a final portfolio

### Course Outcomes

- To inculcate creativity and designing capability
- To improve Illustration skill, organization skills & communication skills
- To be able to formulate and diagnose various colour combinations

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
		CO				
PEO		1	2	3		
i.						
ii.	<b>S</b>	<b>S</b>	<b>S</b>			
iii.		<b>m</b>				
iv.						

### LIST OF EXPERIMENTS

1. Designer profile
2. Trend Forecasts
3. Theme board
4. Inspiration board
5. Theme Write Up.
6. Creation of Mood board
7. Colour board
8. Customer profile
9. Design development board
10. Flat presentation
11. Fabric board
12. Spec sheet
13. Fabric sourcing
14. Illustration with Back Drops
15. Pattern Making and Garment Construction board
16. Accessory Board
17. Final presentation
18. Designer show/ Garment exhibition (Four garments)

## 22BSUG50 – INTERNSHIP - II

### Course Objectives

- To expose the students in the real time world
- To gain knowledge on the process, machinery and technology

### Course Outcomes

After successful completion of this course, the students should be able to

- Identify the solution for industry related problems
- Understand the suitable process, machinery and technology for product manufacturing
- Summarize the results and submit a report.

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )					
		CO					
PEO		1	2				
		i. <b>s</b>	<b>s</b>				
ii.							
iii. <b>m</b>		<b>m</b>					
iv.							

### Pre-requisites:

Students will undergo internship training in an established organization of Textile / Apparel Retail for a period of 3 weeks.

- At the end of internship training, students will submit a report of training undertaken.
- The student has to present their report to the Panel of members for evaluation.

**SEMESTER VI**  
**22BSTX61 – APPREL COSTING AND EXPORT DOCUMENTATION**

**Course Objectives**

- To impart knowledge on various costing techniques
- To know the export documentation procedures

**Course Outcomes**

Upon successful completion of this course the student would be able to,

- Appreciate the importance of budgeting.
- Understand the elements of cost.
- Gain knowledge about pricing methods and policies.

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO		1	2			
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ii.	<b>s</b>					
iii.						
iv.	<b>m</b>	<b>s</b>				

**UNIT I**

**Budgeting and Principles of costing:** Budgeting – aims of Budgeting, types of budget. Costing - aims of costing, Elements of cost – Material cost, Labour cost and overheads, difference between budgeting and costing. Depreciation cost – reasons and methods of calculating depreciation. Pricing policies, Factors influencing pricing. Pricing Methods - Full- cost pricing, Marginal cost pricing.

**UNIT II**

**Costing of garments:** Cost determinants - Raw material to finished product - cutting, making and trim cost (CMT) - lot size and design affecting cost. Cost of bought out components - Thread, button, zipper and interlining.

**UNIT III**

**Costing Practices** - Costing methods, Cost estimation bulk production. Cost calculation by interpreting Specification sheet Practical cost calculation for Ladies, Men's and Children's wear – woven and knitted.

#### **UNIT IV**

**Selecting export markets:** country identification, risk evaluation, pre-shipment export finance – role of commercial banks. Difference between foreign trade and domestic trade- legal requirements for exporting - IE code number definition – registration with sales tax department, central excise department and export promotion councils / commodity boards.

#### **UNIT V**

**Export Document:** Importance, terms of payment: Letter of credit – documentary collection – open account. Terms of shipment – Incoterms - essential elements of an export contract, different types of invoices, bill of lading, packing list, inspection certificates, delivery instructions and delivery orders, drafts of payment, letters of credit, negotiation of documents – action in the event of discrepancies. Online documentation. International trade policy

#### **TEXT BOOKS**

1. Charles T. Horngren.(2001)."Introduction to Management Accounting, Prentice Hall. New Delhi,
2. M. I.Mahajan.(2007). "Export Policy, Procedures and Documentation", , Mumbai:Snow-white Publishers
3. Thomas E. Johnson and Donna L. Bade(2010) Export/Import Procedures and Documentation,

#### **REFERENCES:**

1. Levi.(1997)International Finance, Tata McGraw-Hill.,
2. R. Narayanaswamy, Financial Accounting – A Managerial Perspective, Prentice Hall India Pvt. Ltd.,New Delhi,1997.
3. S. K. Bhattacharya & John Dearden, (2000) "Accounting for Management Text and Cases," Vikas Publishing House, New Delhi, Ministry of Commerce, Govt. of India.

## 22BSTX62 – ENTREPRENEURSHIP DEVELOPMENT

### Course Objectives

- To create awareness and enhance skills in identifying opportunities, develop ideas and start business ventures.
- To emphasizes on entrepreneurial process.

### Course Outcomes

Upon successful completion of this course the student would be able to,

- Gain knowledge on textile entrepreneurship.
- Understand the barriers of starting a small business.
- Learn the process of managing small and medium business

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO		1	2			
		i.				
ii.						
iii.	<b>S</b>	<b>S</b>				
iv.	<b>m</b>					

### UNIT I

Entrepreneurship: Internal and external factors, functions of an entrepreneur, entrepreneurial motivation and barriers, classification of entrepreneurship, theory of entrepreneurship, concept of entrepreneurship, development of entrepreneurship; culture, stages in entrepreneurial process.

### UNIT II

Business plan development: Creativity and entrepreneurial plan - Idea generation, screening and project identification, creative performance, feasibility analysis: Economic, marketing, financial and technical - Project planning - Evaluation, monitoring and control segmentation - Creative problem solving - Heuristics, brainstorming, value analysis and innovation.

### UNIT III

Institutional support for new ventures - Supporting Organizations: Incentives and facilities: Financial institutions and small-scale industries, Government Policies for SSIs, Angel investors, and private equity.

### UNIT IV

Family and non-family entrepreneur - Role of professionals, professionalism v/s family entrepreneurs, role of woman entrepreneur - Venture capital - Nature and overview, venture capital process, locating venture capitalists.

**UNIT V**

Role of support institutions and management of small business - Director of industries - DIC, SIDCO, SIDBI, TIIC, MSME small industries, development corporation (SIDC), SISI, NSIC, NISBUED, SFC-Unicorn startups.

**TEXT BOOKS:**

1. Poornima M Charantimath, "Entrepreneurship Development and Small Business Enterprise", Pearson Education India, Noida, 2011 & 2014
2. Holt, "Entrepreneurship: New Venture Creation", Prentice-Hall Inc., USA, 1998.

**REFERENCES:**

1. Simon Bridge & Ken O'Neill, "Understanding Enterprise: Entrepreneurship and Small Business", Palgrave Macmillan, London, 4th Edition, 2012.
2. Dollinger M J, "Entrepreneurship", Prentice Hall Inc., USA, 1999.

## ELECTIVE COURSES

### ELECTIVE I 22BSTX35 (A) – APPAREL SIZE AND FIT ANALYSIS

#### Course Objective:

- The course is aimed at providing an overview of sizing system and its impact on the fit of the constructed silhouettes.

#### Course Outcome:

- The students would develop an understanding of the complex issue of sizing and overall garment appearance

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO		1	2			
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ii.	<b>S</b>	<b>S</b>				
iii.		<b>m</b>				
iv.						

#### UNIT I

Anthropometry; Study of body measurements – infants, children's, women's and men's. perception of body appearance; figure analysis; body ideals; height and weight distributions; body proportions.

#### UNIT II

History of sizing system; creating sizing system. Sizing standardization-numbered, lettered sizing- Men's, Women's and Children's. Methods of sizing for mass production of clothing for men, women. Mass customization-sizing technologies and application.

#### UNIT III

Fit-Elements of fit-Human performance in clothing system-objective and subjective evaluation of fit. Analyzing poor fit – pattern alteration for fit. Virtual garmenting.

#### UNIT IV

Fabric properties influencing clothing appearance and fit. Fabric drape, seamed fabric drape, dynamic fabric drape. Objective evaluation of overall garment appearance.

#### TEXT BOOKS:

1. Fan J, Yu W and Hunter L, "Clothing Appearance and Fit", The Textile Institute, Wood head Publishing Limited, England, 2004.

2. Ashdown S P, "Sizing in clothing", The Textile Institute, Woodhead Publishing Limited,= England, 2007.
3. Sandra Betzina , "Fast Fit-Easy pattern alterations for every figure", The Taunton Press, Inc., Singapore, 2003.

**REFERENCES:**

1. Patty Brown and Janett Rice, "Ready-To-Wear Apparel Analysis", Prentice Hall, 2001.
2. Editors of Creative publishing, " The Perfect Fit- classic guide to alter patterns", Creative publishing international, USA, 2005.
3. Lynn Macintyre and Mary Tilton, "Easy Guide to sewing", Taunton press, USA, 2009.

## 22BSTX35 (B) – HOME TEXTILES

### Course Objectives:

- To enable the students to learn about the
- Recent developments in furnishing, floor covering and other home textile products

### Course Outcomes:

Upon completion of this course, the student shall be able to

- Know about different types of home textiles
- Understand the production method of different types of home textile products

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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iii.						
iv.	<b>m</b>	<b>s</b>				

### UNIT I

**FURNISHINGS:** Developments in Textile Furnishing; Type of Furnishings Materials - Woven and non-woven; Factors affecting selection of Home Furnishings.

### UNIT II

**FLOOR COVERINGS:** Recent Developments in manufacturing of floor coverings -Hard Floor Coverings, Resilient Floor Coverings, Soft Floor Coverings, Rugs, Cushion and Pads; Care of floor coverings.

### UNIT III

**CURTAINS AND DRAPERIES:** Advances in Home decoration - Draperies - Choice of Fabrics, Curtains - Types of Developments in Finishing of Draperies; Developments in tucks and Pleats; uses of Drapery Rods, Hooks, Tape Rings and Pins.

### UNIT IV

**HOME FURNISHING:** Advances in period style in, Different styles, and use of Colours, design & texture in home furnishing. Developments in living room furnishing including upholstery, Wall Hangings, Cushion, Cushion Covers, Bolster and Bolster Cover.

## **UNIT V**

**BED LINENS:** Advances in the production of - Different Types of Bed Linen, Sheets, Blankets, Blanket Covers, Comforts, Comfort Covers, Bed Spreads, Mattress and Mattress Covers, Pads, Pillows.

### **TEXT BOOKS:**

1. Alexander.N.G., "Designing Interior Environment" , Mas Court Brace Covnorich, Newyork, 1972
2. Donserkery.K.G., "Interior Decoration in India" , D. B. Taraporeval Sons and Co. Pvt. Ltd., 1973

### **REFERENCES:**

1. Wingate I.B. & Mohler J.F., "Textile Farbics & Their Selection" , Prentice Hall Inc., New York, 1984.
2. Irsak.C, " Nonwoven Textiles" Textile Institute", Manchester, 1999
3. Krcma.R., Manual of Non-wovens, Textile Trade Press, Manchester 1993.

**ELECTIVE II**  
**22BSTX45 (A) – FASHION PHOTOGRAPHY**

**OBJECTIVES:**

- To educate on principles of photography. Different techniques and lighting methods
- To educate on different types of photography equipments. Photography for different media, printing techniques.
- To impart knowledge on videography and computer applications in photography.

**OUTCOMES:**

- The students would have enhanced their knowledge on
- Different photography techniques and equipments.
- Different printing techniques.

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO		1	2	3		
		i.				
ii.	<b>S</b>	<b>S</b>	<b>S</b>			
iii.		<b>m</b>				
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**UNIT I**

General principle - Photography - camera, lens. How to use your camera - Needs and methods lighting techniques for indoor / outdoor photography - methods and equipment' s - advantage and disadvantages.

**UNIT II**

Image capture - parts of camera- classification and types of camera - Applications Disadvantages. Light - Natural, artificial, flash and strobe.

**UNIT III**

Photography techniques and equipment for different fields. Basic, studio, location portraiture, Photojournalism, Fashion Photography, Fashion shows.

**UNIT IV**

Exposure and processing of colour and black and white films. Different techniques in developing. Printing - definitions - Methods of printing for black & white color.

## **UNIT V**

Photography using digital cameras - Video photography - image mixing - advertising and still life - application of computers in photography.

### **TEXT BOOK:**

1. W.R. Miller, "Basic Industrial Arts, Plastics, Graphics Arts, Power Mechanics, Photography", McKnight Publishing Company, Illinois, 1978.
2. Nirmal Pasricha, "A Professional 's Basic Photography", Black Rose Publications, Delhi, 2002.
3. Daniel Lezano, "The Photography Bible", A David and Charles Book., United Kingdom, 2004.

### **REFERENCES:**

1. John Hedge, "Photography Course" , John Hedge Co, 1992
2. Simon Joinson, "Get the most from your Digital Camera", A David and Charles Book., United Kingdom, 2004.
3. Steve Bavister, "35 mm Photography -The Complete Guide", A David and Charles Book., United Kingdom, 2004.
4. Peter Cattrell, "Photography", Octopus Publishing Group Ltd, London 2005.
5. Sue Hillyard, "The Photography Handbook - A Step by Step Guide", New Holland Publishers, London, 2003

## **22BSTX45 (B) – TECHNICAL TEXTILES**

### **Course Objectives**

- To inculcate the knowledge of textile materials in various technical areas.
- To learn about technical textiles, and its applications in different field knowledge.

### Course Outcomes

Upon successful completion of this course the student would be able to,

- Identify the various technical textiles used in the day to day life
- Visualize the usage of various fibres for specific application

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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PEO		1	2			
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### UNIT I

**Technical Textiles:** Definition – Classification – Market growth and potential - Future of Technical Textiles industry in India. Fibres used - Technical yarns: staple yarns, monofilament, multifilament yarns - Technical fabrics: woven, nonwoven, knitted and braided structures.

### UNIT II

**Medical Textiles:** Non-implantable materials, extra-corporeal devices, implantable materials, healthcare and hygiene products. Fibres used in medical textiles.

**Industrial Textile:** Fibres used - functions and properties - introduction to coated fabrics -Coating methods: Direct and indirect - Lamination methods: Flame bonding and adhesive lamination - Applications of coating and laminated textiles.

### UNIT III

**Geo-Textiles:** Materials used – properties – testing methods and application.

**Agro Textiles:** Materials used – properties – classification and applications.

**Build Textiles:** Materials used – classification - properties and applications.

### UNIT IV

**Mobile Tech Textiles:** Raw material selection – properties – classification and applications.

**Protective Textiles:** Materials used – properties - applications: Fire Protective clothing, Heat resistant garments, Water proof materials, Ballistic resistant Vests, Biological and chemical Protective clothing.

### UNIT V

**Sports Textiles:** Raw materials used – classification - properties and applications.

**Smart and Intelligent Textiles:** Active, passive and very smart textiles - Phase change materials - shape memory polymers - chromic and conductive Materials - applications in various fields.

**TEXT BOOKS:**

1. Adanur, Sabit (2017). Wellington Sears Handbook of Industrial Textiles. Rouledge.
2. Horrocks, A. R. & Anand, S. C. (2000). Handbook of Technical Textiles. Cambridge, England: Woodhead Publishing and The Textile Institute.
3. Hearle, J. W. S. (2001). High Performance Fibers, Cambridge, England: WoodHead Publishing limited.

**REFERENCES:**

1. Kumar, Senthil. R. (2013). Textiles for Industrial Applications. 1st Edition. CRC Press.
2. V.K. Kothari Recent advances in technical textiles-Indian journal of fiber and textile research
3. Johnson, J. S. and Mansdorf, S. Z. (1996). Performance of Protective clothing. 5th Volume. USA: ASTM Publication.

**ELECTIVE III**

**22BSTX54 (A) – TOTAL QUALITY MANAGEMENT FOR TEXTILE AND APPAREL INDUSTRY**

### **Course Objectives**

- To make the students understand the basic concepts of total quality management and appreciate its importance in today's business environment.
- To enable them to acquire required diagnostic skills and use various quality tools.
- To familiarize the students about the Quality Management System.

### **Course Outcomes**

- Capable of applying TQM concepts for improving the quality of products and services.
- Use tools and techniques of TQM for continuous improvement in quality.
- Implement Quality Management System.

		<b>MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES</b> <b>(S - Strong, M-Medium )</b>				
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<b>PEO</b>		<b>1</b>	<b>2</b>	<b>3</b>		
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iii.		<b>m</b>				
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### **UNIT 1**

#### **Introduction**

Introduction and basic concepts, Definition of quality, Dimensions of quality, Evolution of TQM, TQM frame work, Cost of Quality.

### **UNIT 2**

#### **TQM Implementation**

Leadership for TQM, Deming's quality principle, TQM implementation, PDSA cycle, Quality Circles, Quality Council, Supplier Partnership.

### **UNIT 3**

#### **Process approach to TQM**

Process approach, Juran's Trilogy, Taguchi's loss function, Kaizen, Quality by design, 5S, 5M.

### **UNIT 4**

#### **Tools and Techniques**

7 Old quality control tools, Total productive maintenance, Failure mode and effect Analysis, POKAYOKE, Six Sigma, Toyota and Six Sigma.

## **UNIT 5**

**Quality Management Systems:** Management systems for TQM, ISO 9000 & 14000 Quality management systems, Auditing and certification Process - Quality Awards.

## **REFERENCES**

1. Dale H. Besterfield etal, “Total Quality Management”, New Delhi: Pearson Education, 2011.
2. Subburaj Ramasamy, “Total Quality Management”, New Delhi: Tata McGraw Hill Publishing Co. Ltd, 2008.
3. J.R. Evans and W.M. Lindsay, “Quality control and Management”, New Delhi: Cengage Learning first edition, 2010.
4. Barrie G Date, Ton Van Der Wiet and Jos Van Iwaarden, “Management Quality”, New Delhi: Wiley Publications, 2012.
5. Greg Brue, “Six Sigma for Managers”, New Delhi: Tata McGraw Hill Publishing Co. Ltd, 2002.

## 22BSTX54 (B) – APPAREL PRODUCTION PLANNING AND PROCESS CONTROL

### Course Objectives

- To understand the concepts in production planning and control.
- To utilize the various techniques in production planning and control.
- To understand the material management and their movement in the production.

### Course Outcomes

Upon successful completion of this course the student would be able to,

- Utilize the various tools for enhancing the productivity
- Identify various forms for production control
- Elaborate on the various production control systems

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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### UNIT I

**Production Planning:** Objectives - production control system: functional areas - elements - types – strategy production - pre-planning - pre-production functions - product acceptance -product development.

### UNIT II

**Production Systems:** Whole garment production system - progressive bundle system – unit production system - multiple flow system - modular system - evaluating production system - principles for choosing a production system.

**Flow Process grid and charts:** Flow process grid construction - flow process grids for production control - Producing multiple styles.

### UNIT III

**Production Analysis:** Qualitative and quantitative specifications - cut order planning - marker utilization - economic cut quantities.

**Plant Loading and Capacity Planning:** Determination of machinery requirements for a new factory - calculation of labour requirements - application of line balancing techniques - balance control.

## **UNIT IV**

**Production Scheduling:** Principles - scheduling charts: GANTT chart and backlog graph - scheduling control techniques - network representations: CPM and PERT.

**Machine Loading:** Determination of machine allocations for balanced production in existing plant.

## **UNIT V**

**Production Control Forms:** Form Distribution Chart -Types of Control forms – Materials Management - Manufacturing Resources Planning (MRP) and its types - just in time production system (JIT) - Inventory modeling: Economics order quantity (EOQ) - Optimized production technology (OPT).

### **TEXTBOOKS:**

1. Solinger, Jacob. (2000). Apparel Manufacturing Analysis. Columbia Boblin Media.
2. Bheda, Rajesh. (2002). Managing Productivity of Apparel industry. New Delhi, India: CBI Publishers and Distributors.

### **REFERENCES:**

1. Glock, R. E. and Kunz. G. I. (2005). Apparel Manufacturing: Sewn Product Analysis. 4th Edition. New Jersey, USA: Pearson/ Prentice Hall Publishing Company.
2. Brown, P. K., Brown, P. and Rice, Janett. (2014). Ready To Wear Apparel Analysis. 4th Edition. New Jersey, USA: Pearson/ Prentice Hall Publishing Company.
3. Tyler, D. J. (1991). Materials Management in Clothing Production. New Jersey, USA: Pearson/ Prentice Hall Publishing Company.
4. Karthik, T., Ganesan, P. and Gopalakrishnan, D. (2016). Apparel Manufacturing Technology. India: CRC Press.
5. Colovic, Gordana. (2011). Management of Technology Systems in Garment Industry. India: Woodhead Publishing, CRC Press.
6. Chapman. (2008). Fundamentals of Production Planning and Control. India: Pearson Education India.
7. Nayak, Rajkishore and Padhye, Rajiv. (2015). Garment Manufacturing Technology. Elsevier.

**ELECTIVE IV**  
**22BSTX55 (A) – RETAIL MANAGEMENT AND VISUAL MERCHANDISING**

**Course Objectives**

- To give an understanding to the students about the significant role of retailing in the marketing system.
- To give inputs to gain insights on the issues involved in organizing and establishing a retail format.
- To enable the students to understand about the pricing and promotion strategies in retailing.

**Course Outcomes**

- Able to effectively perform the role of a store manager.
- Able to decide on the length of product assortment based on the store format and shoppers' profile.
- Gain the knowledge and skill sets to become a visual merchandising expert

MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )					
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**UNIT I**

Concept of retailing, Functions of retailing, Terms and Definition, Retail formats and types, Retailing Channels, Non-Store Retailing- On-line sales, Retail Industry in India, Importance of retailing, changing trends in retailing. FDI in Indian retail and its importance - Strategies of international retailers in India

**UNIT II**

Importance of Retail locations, Types of retail locations, Factors determining the location decision, Steps involved in choosing a retail locations, Measurement of success of location, Retail value chain, Retail market segmentation, targeting and positioning. Changing nature of retailing, organized retailing, Modern retail formats, E-tailing, Challenges faced by the retail sector

**UNIT III**

Introduction, Objectives, Concept of Visual Merchandising, Objectives of Visual Merchandising, Growth of Visual Merchandising, Visual Merchandising in India, Scope of visual merchandising in India, Visual Merchandising as a Support for Positioning Strategy, Prospects of Visual Merchandising, Challenges in Visual Merchandising, The common challenges, Ways to overcome the visual merchandising challenges

## **UNIT IV**

Planning a Store Layout, Various Types of Store Layouts, Grid layout, Forced-path layout, Free-form layout, Boutique layout, Combined layout, Store Space Allocation, Heads of space allocation in a store, Managing Customer Navigation in a Store, General Rules of Customer Traffic in a Store, The Loop for Guiding the Shoppers through a Store

## **UNIT V**

Concept of Store Design and Display, Objectives of store design, Purpose and importance of display, Rules of display planning, Display Settings, Store Design, Exterior of a store, Interior of a store, Thematic Communication, Graphics, Signage, Window displays, Merchandise Presentation Strategies

## **REFERENCES**

1. Martin M Peglar S. V. M, Visual Merchandising and Display – Fairchild Publication, Inc. New York – 2002.
2. Tony Morgan - Visual Merchandising 2nd edition
3. Swati Bhalla, Anuraag Singhal - Visual Merchandising – Tata McGraw Hill Education, 2012
4. Swapna Pradhan, “Retailing Management”, Tata McGraw Hill, New Delhi, 3rdEdition,2009.
5. Levy M, Barton AWeitz & Ajay Pandit, “Retailing Management”, Tata Mc Graw Hill, New Delhi, 6th Edition, 2008.
6. Chetan Bajaj, “Retail Management”, Oxford University Press, 2nd Edition,2010.
7. James R. Ogden & Denise T. Ogden, “Integrated Retail Management”, Biztantra, 2007.

- To understand the importance of Brand Management in today's scenario
- To enable the students to understand the concept of brand and its value.

### Course Outcomes

- Able to create strategies for marketing a product at various stages of product life cycle
- Able to take effective decisions on issues pertaining to branding.
- Understand the forecasting procedure.

		MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH COURSE OUTCOMES (S - Strong, M-Medium )				
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### UNIT I

Fashion forecasting - Market research - Evaluating the collection - Fashion services and resources - Portfolio development: Theme board, mood board, colour board, fabric board, customer profile and final design board.

### UNIT II

Fashion show - Definition, planning, budgeting, location, timings, selection of models, collection, set design, music, preparing the commentary, rehearsal. Domestic fashion market - Market centre - Mart - Market week - Trade shows.

### UNIT III

Brand- Definition, brand building process – Types of branding – Role of brand –Brand development – Brand loyalty – Brand equity.

### UNIT IV

Brand names and its basic applications - Brand leverage and brand performance - Market segmentation – Brand positioning-Pricing strategies –Market skimming – Penetration pricing, brand franchising and licensing.

### UNIT V

Designing and sustaining brand strategies, steps in branding, brand equity – Establishing brand values, integrated marketing communication to build brand -Managing brand over time\* – repositioning brands\*

### REFERENCES

1. Mathur U C, "Brand Management Text & Cases", Macmillan Publishers India Ltd., Noida, 2006.

2. Kevin Lane Keller, "Best practice cases in Branding", Pearson Education, New Jersey, 3rd Edition, 2008.
3. Chunawalla SA, "Product management", Himalaya publishing house P Ltd., Mumbai, 2nd Edition, 2010
4. Kotler Philip, "Marketing Management", Pearson Education Inc. USA, 13th Edition, 2009.
5. Mary Frances Drake, Janice Harrison Spoone & Herbert Greenwald "Retail Fashion promotion and Advertising", Prentice Hall Inc, 1991.
6. Mike Easey, "Fashion Marketing", Blackwell Publishing, 3rd Edition, 2008.
7. Elaine Stone, Jean A Samples, "Fashion Merchandising ", McGraw Hill Education, 5th Edition, 1990.
8. Maurice J Johnson & Evelyne C Moore, "Apparel Product Development", Prentice Hall Inc, 2001.