



சா்தார் வல்லபாய் படேல் சர்வதேச ஜவுளி மற்றும் மேலாண்மை கல்லூரி
सरदार वल्लभभाई पटेल इंटरनेशनल स्कूल ऑफ टेक्स्टाइल्स एंड मैनेजमेंट
SARDAR VALLABHBHAI PATEL
International School of Textiles & Management
Autonomous Institute, Ministry of Textiles, Government of India.

B.Sc. – TEXTILES
REGULATIONS, CURRICULUM & SYLLABUS 2021

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I. 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.

S.No.	Programme	Minimum Qualification
1.	B.Sc. - Textiles	A pass in the Plus two examination or equivalent of any recognized board in India with 60% marks (in Physics, Chemistry and Mathematics/Biology) for General category, 55% marks for OBC-NCL and 50% for SC/ST/PWD candidates.

- 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, Central University Common Entrance Exams (CUCET) 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

- b. The duration of each semester will normally be 90 working days.
- c. A Student who is unable to complete the programme within the prescribed duration may be allowed further to a maximum of 2 academic years after the completion of course duration to complete the programme.

3. STRUCTURE OF THE PROGRAMME

- a. This program comprises of Core and Elective courses along with Language courses, namely Tamil / Hindi & English comprising of 49 courses including internships, value added courses, self-interest courses and project work. The program will consist of total 140 credits.
- b. For the final year project, 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).
- c. 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.

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 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.

5. SELF-INTEREST COURSES

- 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.
- 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.
- This flexible learning provides the students a broad spectrum of study.
- Each student has to 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.

6. INTERNSHIP

With the consultation of a faculty guide and coordinator, every student shall undertake a suitable internship at an industry for a period of three weeks 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 given in the guidelines 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 / industrial / research organization. This project is to be carried out for duration of 12 weeks.

8. ASSESSMENT OF THEORY COURSES

ASSESSMENT	MARKS
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

POINTS	AWARD OF MARKS
≥ 90	10 Marks
≥ 80 but < 90	8 Marks
≥ 60 but < 80	6 Marks
≥ 40 but < 60	4Marks
= 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
Total	40 Marks

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)	45	-
Observation	15	-
Report	-	30
Presentation & viva voce	-	10
Total (100)	60	40

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)	60	-
Report	-	80
Presentation & viva voce	20	40
Total (100)	80	120

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)

1. A or
B
2. A or
B
3. A or
B
4. A or
B
5. A or
B

(Apply, Analyze & Evaluate)

PART C Case analysis

(1x20=20 Marks)

- 1.

(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:

Marks Range	Corresponding Grade	Grade Point
Below 50	RA (Re- Appearance)	N.A
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):

S. No.	Range of CGPA	Classification (provided the student pass all courses in the first attempt)
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:

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

Where C_i - is the credit assigned to the course

GP_i - is the grade point obtained by the student

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

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

Where C_i - is the credit assigned to the course

GP_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.
- 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

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
- CL – Core Laboratory
- SC – Skill Enhancement Course
- SL – Skill Enhancement Laboratory
- I – Internship
- PW – Project Work
- VC – Value Added Courses
- SI – Self Interest Courses

CODE	SEMESTER – I	L	T	P	C	CT	AM	
							CIA	ESE
18BST101/ 18BST102	Tamil - I / Hindi - I	3	0	0	3	SC	40	60
18BST103	Communicative English	3	0	0	3	SC	40	60
18BST104	Textile Fibres & Yarn Manufacturing	3	1	0	4	CC	40	60
18BST105	Fashion Designing	3	1	0	4	CC	40	60
18BST106	Applied Physics and Chemistry	3	0	0	3	SC	40	60
18BSL107	Textile Fibres & Yarn Manufacturing Laboratory	0	0	4	2	CL	60	40
18BSL108	Fashion Designing Laboratory	0	0	4	2	CL	60	40
18BSL109	Physics and Chemistry Laboratory	0	0	4	2	SL	60	40
TOTAL CREDITS		23						
CODE	SEMESTER – II	L	T	P	C	CT	CIA	ESE
18BST201/ 18BST202	Tamil - II / Hindi - II	3	0	0	3	SC	40	60
18BST203	Technical English	3	0	0	3	SC	40	60
18BST204	Fabric Manufacturing	3	1	0	4	CC	40	60
18BST205	Management Information System	3	0	0	3	SC	40	60
18BST206	Mathematics	3	0	0	3	SC	40	60
18BST207	Environmental Studies	2	0	0	2	SC	40	60
18BSL208	Fabric Manufacturing Laboratory	0	0	4	2	CL	60	40
18BSL209	Fashion Illustration Laboratory	0	0	4	2	CL	60	40
18BSV210	Yoga for Human Excellence [#]	0	0	2	1	VC	100	-
TOTAL CREDITS		23						
# Only Continuous Internal Assessment. No End Semester Examination								
Internship – 3 Weeks								

CODE	SEMESTER – III	L	T	P	C	CT	CIA	ESE
18BST301	Textile Chemical Processing	3	1	0	4	CC	40	60
18BST302	Basic Apparel Construction	3	1	0	4	CC	40	60
18BST303	Industrial Management	3	0	0	3	SC	40	60
18BSE304	Elective - I	3	0	0	3	EC	40	60
18BSL305	Textile and Apparel CAD Laboratory	0	0	4	2	CL	60	40
18BSL306	Textile Chemical Processing - I Laboratory	0	0	4	2	CL	60	40
18BSL307	Basic Apparel Construction Laboratory	0	0	4	2	CL	60	40
18BSL308	Basic Pattern Making Laboratory	0	0	4	2	CL	60	40
18BSI309	Internship - I	0	0	0	3	I	60	40
TOTAL CREDITS		25						
CODE	SEMESTER – IV	L	T	P	C	CT	CIA	ESE
18BST401	Knitted Fabric Manufacture	3	0	0	3	CC	40	60
18BST402	Cyber Security	3	0	0	3	SC	40	60
18BST403	Statistics	3	0	0	3	SC	40	60
18BSE404	Elective - II	3	0	0	3	EC	40	60
18BSL405	Textile Chemical Processing - II Laboratory	0	0	4	2	CL	60	40
18BSL406	Pattern Making and Grading Laboratory	0	0	4	2	CL	60	40
18BSL407	Garment Construction Laboratory	0	0	4	2	CL	60	40
18BSL408	Knitted Fabric Manufacture Laboratory	0	0	4	2	CL	60	40
TOTAL CREDITS		20						
Internship – 3 Weeks								

CODE	SEMESTER – V	L	T	P	C	CT	CIA	ESE
18BST501	Textile and Apparel Quality Evaluation	3	1	0	4	CC	40	60
18BST502	Industrial Engineering in Apparel Production	3	1	0	4	CC	40	60
18BSE503	Elective - III	3	0	0	3	EC	40	60
18BSE504	Elective - IV	3	0	0	3	EC	40	60
18BSL505	Textile and Apparel Quality Evaluation Laboratory	0	0	4	2	CL	60	40
18BSL506	Home Textiles Laboratory	0	0	4	2	CL	60	40
18BSL507	Fashion Portfolio Laboratory	0	0	4	2	CL	60	40
18BSL508	Apparel Construction Adult's Wear Laboratory	0	0	4	2	CL	60	40
18BSI509	Internship - II	0	0	0	3	I	60	40
TOTAL CREDITS		25						
CODE	SEMESTER – VI	L	T	P	C	CT	CIA	ESE
18BST601	Textile Costing and Export Documentation	3	0	0	3	CC	40	60
18BST602	Entrepreneurship Development	3	0	0	3	SC	40	60
18BSP603	Project Work	0	0	24	12	PW	80	120
18BSV604	Value Added Course - I #	1	0	2	2	VC	100	-
18BSV605	Value Added Course - II #	1	0	2	2	VC	100	-
18BSS606	Self-interest Course #	0	0	0	2	SI	100	-
TOTAL CREDITS		24						
CUMULATIVE CREDITS		140						
# Only Continuous Internal Assessment. No End Semester Examination								

SEM III - 18BSE304 – ELECTIVE - I	
A	Apparel Production Machinery and Equipment
B	Clothing Care and Comfort
SEM IV - 18BSE404 – ELECTIVE - II	
A	Technical Textiles
B	Apparel Production Planning and Control
SEM V - 18BSE503 – ELECTIVE - III	
A	Apparel Merchandising and Marketing
B	Supply Chain Management
SEM V - 18BSE504 – ELECTIVE - IV	
A	Fashion Forecasting
B	Fashion Brand Management

List of Value Added Courses:

- Fashion Accessories
- Soft Toys and Doll Making
- Visual Merchandising
- Intellectual Property Rights
- Digital Marketing
- Event Management
- Digital Marketing
- Artificial Intelligence (AI)
- Industry 4.0
- 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

18BST101 - TAMIL – I

3 0 0 3

குறிக்கோள்கள்:

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

		MAPPING OF COURSE OUTCOMES AND PROGRAMME OUTCOMES (S - Strong, M-Medium)				
		CO				
PO						
	1	2	3			
i.						
ii.						
iii.						
iv.	S	S	S			

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 தமிழன்பன்- அகல் விளக்காக இரு
4. அப்துல் ரகுமான்- கண்ணீரின் ரகசியம்....
5. மாலதி மைத்ரி- குருவி
6. வத்ஸலா - நான் ஆலமரம்

அலகு - 3 (இலக்கணம்)

- 1.வல்லெழுத்து மிகும் இடங்கள்
- 2.வல்லெழுத்து 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 செஞ்சுரி புக் ஹவுஸ் பி லிட், 41பி, சிட்கோ
இண்டஸ்டிரியல் எஸ்டேட், அம்பத்தூர், சென்னை-600098
2. அழகோ அழகு - வெ. இறையன்பு - நியூ செஞ்சுரி புக் ஹவுஸ் பி லிட், 41பி, சிட்கோ
இண்டஸ்டிரியல் எஸ்டேட், அம்பத்தூர், சென்னை-600098

குறிப்பு புத்தகம்:

1. தீந்தமிழ் இலக்கணம் (க. வெள்ளிமலை எம்.ஏ.) – ஐவரி அச்சகம், சென்னை – 600005
2. இலக்கணம் இலக்கிய வரலாறு மொழித்திறன் (பேராசிரியர்.முனைவர். பாக்யமேரி) – பூவேந்தன் பதிப்பகம், மயிலாப்பூர், சென்னை.

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 COURSE OUTCOMES AND PROGRAMME OUTCOMES (S - Strong, M-Medium)					
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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.

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 COURSE OUTCOMES AND PROGRAMME OUTCOMES (S - Strong, M-Medium)				
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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: 978-81-7596-536-2

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 COURSE OUTCOMES AND PROGRAMME OUTCOMES (S – Strong, M-Medium)					
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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 Private Limited.

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 COURSE OUTCOMES AND PROGRAMME OUTCOMES (S - Strong, M-Medium)				
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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. 2nd Edition. John Wiley and Sons.
3. Frings, Gini Stephan. (2007). Fashion from concept to consumer. 9th Edition. Pearson Education.

REFERENCES:

1. Davis, Jenny. (2006). A Complete Guide to Fashion Designing. 1st Edition. Chandigarh: Abhishek Publications.
2. Mahadevan, M. G. (2008). Textile colouring. 1st 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. 1st 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. 1st Edition. Nine Heads Media Publication.

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 COURSE OUTCOMES AND PROGRAMME OUTCOMES (S – Strong, M-Medium)					
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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 – Poiseuille's flow – Stoke's law – 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.

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 COURSE OUTCOMES AND PROGRAMME OUTCOMES (S - Strong, M-Medium)				
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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.

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 COURSE OUTCOMES AND PROGRAMME OUTCOMES (S - Strong, M-Medium)					
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LIST OF EXPERIMENTS:

1. Understand the Basic design
2. Understand the following Colour wheels:
 - a. Prang colour chart
 - b. Munsell
 - c. Physicists
 - 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, Childy. (2009). Essential Fashion Illustration: Men. Beverly, Massachusetts: Rockport Publishers.

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 COURSE OUTCOMES AND PROGRAMME OUTCOMES (S - Strong, M-Medium)					
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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.

SEMESTER – II

18BST201 – TAMIL - II

3 0 0 3

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 விளையாட்டுகளை குறுநாவல் வழி கற்றல்

MAPPING OF COURSE OUTCOMES AND PROGRAMME OUTCOMES (S - Strong, M-Medium)					
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ii.					
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அலகு - 1

திருக்குறள் - 1. ஊக்கமுடைமை 2.செய்நன்றியறிதல்

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

அலகு - 2

திருஞானசம்பந்தர் தேவாரம் – கோளறுதிருப்பதிகம் (10 பாடல்கள்) பெருமாள் திருமொழி - 11 பாடல்கள் . இயேசுகாவியம் – பாரச்சிலுவை (8 பாடல்கள்) சீறாப்புராணம் - கடவுள் வாழ்த்து (5 பாடல்கள்)

அலகு - 3 - இலக்கணம்

பவணந்தி முனிவர் - நன்னூல் - எழுத்து - மாணாக்கனது வரலாறு பாடங்கேட்டலின் 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 - தமிழ்ருவி மணியன்
5. சாதனை படைக்கும் சிந்தனைகள் - உயர்வளிக்கும் எண்ணங்கள் - டாக்டர். சிவசூரியன்

அலகு - 5

வாடி வாசல் (நாவல்) - சி.சு.செல்லப்பா - காலச்சுவடு 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. தமிழ்ருவி மணியன் - அன்பிற் சிறந்த தவமில்லை
5. டாக்டர். சிவசூரியன் - சாதனை படைக்கும் சிந்தனைகள் - உயர்வளிக்கும் எண்ணங்கள்
6. பவணந்தி முனிவர் - நன்னூல்
7. சி.சு.செல்லப்பா - காலச்சுவடு பதிப்பகம்

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.

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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.

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

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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 Univeristy Press: New Delhi, 2014
2. Means, L Thomas and Elaine Langlois, English & Communication for Colleges, Cengage Learning, USA: 2007

Course Objective

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

Course Outcomes

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

- Understand the preparatory process for woven and nonwoven fabric production
- Explain the conventional and modern weaving systems
- Determine various weave patterns
- Understand the various nonwoven and braiding techniques

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UNIT I

Preparatory process: Pirn winding – introduction – high speed winding machine. Warping – introduction - warping machine – sectional warping machine. Sizing – introduction - ingredients – machines used. Warping and sizing defects. Drawing in – denting.

UNIT II

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

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

UNIT III

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

UNIT IV

Weave Design: Introduction - elements of design, draft, peg plan. Weave structure - plain, twill, satin, sateen, honeycomb, huck-a-back, terry, extra warp, extra weft, backed fabric, double fabric, gauze and leno.

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. Grosicki, Z. J. (2004). Watson's Textile Design and Colour, 7th Edition: 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. Gokarneshan N. (2004). Fabric Structure and Design. New Delhi: New Age International Pvt. Ltd.

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.

Course Objectives

- 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

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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.

Course Objectives

- To enable the students to acquire knowledge of mathematics and operations and their applications in business decision making.

Course Outcomes

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

- The students should have understood set operations, matrix and mathematics of finance, Operational tools and their applications.

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UNIT I

Matrices: eigenvalues and eigenvectors of a real matrix – characteristic equation – properties of eigenvalues and eigenvectors – statement and applications of Cayley-Hamilton theorem – diagonalization of matrices – reduction of a quadratic form to canonical form by orthogonal transformation – nature of quadratic forms.

UNIT II

Ordinary Differential Equations: Higher order linear differential equations with constant coefficients – method of variation of parameters – Cauchy’s and Legendre’s linear equations – simultaneous first order linear equations with constant coefficients.

UNIT III

Multiple Integrals: Double integrals in Cartesian and polar coordinates – change of order of integration – area enclosed by plane curves – change of variables in double integrals – area of a curved surface – triple integrals – volume of solids.

UNIT IV

Introduction to operations research – meaning – scope – models – limitation – linear programming – formulation – application in management decision making (graphical method only).

UNIT-V

Transportation (non-degenerate only) - assignment problems - simple problems only CPM - principles - construction of network for projects – types of floats – slack - crash programme. PERT - time scale analysis - critical path - probability of completion of project - advantages and limitations

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

TEXT BOOKS:

1. Bali N P & Manish Goyal, “A Text book of Engineering Mathematics”, Laxmi Publications P Ltd., 8th Edition, 2011.
2. Grewal B S, “Higher Engineering Mathematics”, Khanna Publications, New Delhi, 41st Edition, 2011.
3. Dr. Vittal P R, “Business Mathematics & Statistics”, Margham Publications, 6th Edition, 2012.
4. Kanti Swarup, Gupta P K & Man Mohan. “Operations Research”, S Chand & Sons, Chennai, 1978.

REFERENCES:

1. Dass H K, & Er. Rajnish Verma, “Higher Engineering Mathematics”, S Chand P Ltd, New Delhi, 2011.
2. Glyn James, “Advanced Modern Engineering Mathematics” Pearson Education, New Delhi, 3rd Edition, 2012.
3. Sundaresan & Jayaseelan, “An Introduction to Business Mathematics and Statistical Methods”.

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

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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.

Course Objectives

- To study the operating mechanism of the weaving machine
- To study the woven fabric structures and its derivatives.

Course Outcomes

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

- Understand the yarn passage in weaving machine
- Design the weave patterns
- Identify design draft and peg plan

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List of Experiments

1. Study of material passage in loom
2. Study the passage of material in braiding machine
3. Analysis of woven designs: Plain and its derivatives
4. Analysis of woven designs: Twill and its derivatives
5. Analysis of woven designs: Satin / Sateen
6. Analysis of huck-a-back / honeycomb weaves
7. Analysis of mock-leno / crepe weaves
8. Analysis of extra warp / extra weft figurine
9. Analysis of double fabric
10. Analysis of Pile fabric

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.

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.

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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.

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

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UNIT I: Yoga Types

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

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

18BST301 - TEXTILE CHEMICAL PROCESSING

3 1 0 4

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

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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 - calendaring, 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.

18BST302- BASIC APPAREL CONSTRUCTION

3 1 0 4

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.

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UNIT I

Basic Terminology: Measuring, pattern, grading, marking, cutting, pressing, selvedge, grain, on fold and draping – Tools: General, measuring, marking, cutting, sewing and pressing.

Sewing: Parts and function of a single needle lock stitch machine. Types and application of seams, seam finishes, stitches and hemming.

UNIT II

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 III

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 IV

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 V

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

Cuff: Classification – selection – creating varieties - construction

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

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. Zarpkar, K. R. (2011). Zarpkar 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 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

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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,1stEdition, Excel Books, New Delhi.
3. Pandey I.M.(2010),Financial Management,10thEdition, VikasPublishing 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 enhancing 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

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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. Development of Dobby design and prepare 2D simulation.
 5. Development of Jacquard design and prepare 2D simulation.
 6. Patten drafting and grading for Baby frock.
 7. Patten drafting, grading and marker plan for T- Shirt.
 8. Patten drafting, grading and marker plan for Formal shirt.
 9. Patten drafting, grading and marker plan for Trouser.
 10. Patten drafting, grading and marker plan for Skirt and Top’s.
 11. Patten drafting, grading and marker plan for Blouse.
 12. Patten 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.

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

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LIST OF EXPERIMENTS:

1. Desizing of greige cotton fabric and evaluation of its efficiency
2. Scouring of cotton fabric
3. Bleaching of cotton fabric using universal bleaching agent
4. Mercerization of cotton fabric
5. Degumming of silk filament / fabric
6. Dyeing of cotton fabric with direct dyes
7. Dyeing of cotton fabric using Reactive dyes – a) Hot b) Cold.
8. Dyeing of polyester fabric using disperse dyes
9. Dyeing of nylon fabric with acid dyes.
10. Dyeing of acrylic yarn / wool using basic dyes
11. Assessment of wash and rubbing fastness of fabrics dyed with reactive/direct dyes.
12. Determination of shrinkage for woven and knitted fabric

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.

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.

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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, raglan 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. Zarakar, 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.

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

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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. Baba suit
 - iii. 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 outside. 1st Edition. Wiley - Blackwell Publications.
4. Bray, Natalie. (2003). More dress pattern designing. 4th Edition. Wiley - Blackwell Publication.

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.

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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

18BST401 - KNITTED FABRIC MANUFACTURE

3 0 0 3

Course Objectives

- Conceptual clarity on various mechanisms and machines used for knit fabric manufacture.
- To educate students about the basics of knit structures and its derivatives.
- Elucidate the students on identifying the knit structures for suitable applications.

Course Outcomes

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

- Identify knitting machine class and knit structures
- Understand the functions of knitting machine.
- Determine the properties of various knit fabric structures

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UNIT I

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,

UNIT II

Weft knitting machines: Basic weft knitting machines – machine construction. Needle selection in weft knitting – multi-cam tracks, knitting cycle and yarn path of single and double jersey structures - knitting terminologies - open loop, closed loop, course, wale, stitch density and loop length.

UNIT III

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, fabric characteristics and derivatives, notations and needle gaiting.

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

Knitted Fabric Geometry: Production calculation in weft knitting, calculation of optimum knitting conditions, weft knitted fabric geometry - dimensional states and dimensional parameters such as stitch length, WPI, CPI, stitch density, GSM and TF.

TEXT BOOKS:

1. Ajgaonkar, D. B. (1998). Knitting Technology. Bombay: Universal Publication Corporation.
2. Spencer, D. J. (2001). Knitting Technology, 3rd Edition. Manchester, UK: Textile Institute Publication.

REFERENCES:

1. Paling, D. F. (1992). Warp Knitting Technology. Buxton: Columbine Press.
2. Brackenbury, T. (1992). Knitted Clothing Technology. UK: Blackwell Science Ltd.
3. Wilkens, C. (1997). Warp Knit Machine Elements. UK: Blackwell Science Ltd.
4. Anbumani, N. (2007). Knitting Fundamentals, Machines, Structures and Developments. New Delhi: New Age International (P) Ltd.
5. Spencer, D. J. (2001). Knitting Technology – A Comprehensive Handbook and Practical Guide. 3rd Revised Edition. Wood head Publishing.
6. Ray, S. C. (2012). Fundamentals and Advances in Knitting Technology. India: Woodhead Publishing, CRC Press.

Course Objectives:

- To enable the students to gain knowledge in providing the security concepts
- To create the awareness of threats that may arise on Cyber Space

Course Outcomes:

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

- Discuss on the security issues relating to sensitive data
- Formulate techniques for keeping the data safe

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UNIT I

Network and Security Concepts: Information assurance fundamentals – basic cryptography - symmetric encryption - public key encryption – the domain name system – firewalls.

Microsoft Windows Security Principles: Windows tokens - window messaging - windows program execution - the windows firewalls.

UNIT II

Attacker Techniques and Motivations: How hackers cover their tracks – tunneling techniques – fraud techniques – attacks against privileged user accounts and escalation of privileges - stealing information and exploitation - self-replicating malicious code - evading detection and elevating privileges

UNIT III

Evidence Collection and Forensics Tools: Processing crime and incident scenes - Current computer forensics tools: Software/ Hardware tools - Network forensics – Email Investigations – Cell phone and mobile devices forensics.

UNIT IV

Defense and Analysis Techniques: Memory Forensics - Honeypots – Malicious Code naming – Automated malicious code analysis.

UNIT V

Introduction to Computer Forensics: Introduction to traditional computer crime, traditional

problems associated with computer crime - Introduction to identity theft and identity fraud - types of CF techniques – Incident and incident response methodology – Forensic duplication and investigation - Preparation for IR: Creating response tool kit and IR team. – Forensics technology and systems – Understanding computer investigation – Data acquisition.

TEXT BOOKS:

1. Graham, James., Olson, Ryan. and Howard, Rick. (2010). Cyber Security Essentials. Auerbach Publications, CRC Press.
2. Russell, Debby and Gangemi G T. (1991). Computer Security Basics. O Reilly Media.

REFERENCES:

1. Nelson, Phillips, Enfinger, Steuart, “Computer Forensics and Investigations”, Cengage Learning, India Edition, 2008.
2. John W Rittinghouse & William M Hancock, “Cyber Security Operations Handbook”, Reed Elsevier, 2008.

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

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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 Objectives

- To practice various styles of printing using different classes of dyes
- To impart different functional finishes to fabrics.

Course Outcomes

- To understand and acquire knowledge on various finishing processes.
- To understand the process sequences of various finishing processes.
- To understand the changes in material properties caused by finishing processes.

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LIST OF EXPERIMENTS:

1. Dyeing of cotton fabric using –Tie & dye techniques.
2. Printing of cotton fabric on direct style.
3. Batik/Block printing on cotton fabric
4. Dyeing of silk using acid dye
5. Dyeing of silk fabric using natural dye
6. Dyeing of cotton fabric using natural dye
7. Printing of cotton fabric by stencil technique a) positive b) negative
8. Finishing of cotton fabrics with softener and stiffener - assessment of bending rigidity of the same.
9. Assessment of weight loss and pilling performance of bio-polish finish.
10. Evaluation of Antimicrobial finish (herbs) on cotton fabric.

REFERENCES:

1. Shenai, V. A. (2000). Technology of Dyeing. Mumbai: Sevak Publications
2. Arora, A. (2011). Textbook of Dyes. New Delhi: Sonali Publications.
3. Kapoor, Seema. (2012). Dyeing of Textile material. New Delhi: Sonali Publication.

4. Niyati Bhattacharya (2010), Natural dyes for Textiles and their ecofriendly application, New Delhi: IAFL Publication,.
5. Clarke, W. (2004), An Introduction to Textile Printing, London: Wood Head Publishing Limited.

18BSL406 – PATTERN MAKING AND GRADING LABORATORY

0042

Course Objectives

- To know about human body proportion and develop skills of taking required body measurements.
- To learn the practical aspects of pattern preparation

Course Outcomes

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

- Effectively handle various pattern making tools.
- Interpret various measurements from basic measurements.
- Critically analyze the created patterns.

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LIST OF EXPERIMENTS

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

- Nighty
- 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.

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

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LIST OF EXPERIMENTS:

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

1. Bib and Jabla
2. Romper
3. Knickers
4. A- line frock
5. Middy top
6. Skirt
7. Boy's yoke less Shirt
8. Boy's short

REFERENCES:

1. Zarpkar, 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.

Course Objectives

- To study the various knitting machines and differentiate them.
- To develop a knitted fabric based on their application

Course Outcomes

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

- Experiment with the various machine parameters for creating a fabric for a specified end use Identify the given knitted fabric

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LIST OF EXPERIMENTS:

1. Study of Single jersey knitting machine.
2. Study of Interlock knitting machine
3. Study of Rib knitting machine
4. Analysis of Single jersey knitted fabrics
5. Analysis of Interlock knitted fabrics
6. Analysis of Rib knitted fabrics
7. Analysis of Jacquard knitted fabrics
8. Analysis of commercial knitted fabrics collected from industry (Two Samples).

REFERENCES:

1. Anbumani N, “Knitting-Fundamentals, Machines, Structures and Developments”, New Age International (P) Ltd., New Delhi, 2007.
2. Spencer D J, “Knitting Technology”, Textile Institute Publication, Manchester, UK, 3rd Edition, 2001

SEMESTER - V

18BST501 – TEXTILE AND APPAREL QUALITY EVALUATION

3 1 0 4

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

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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 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.

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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.

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.

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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.,

Course Objectives

- To familiarize the students about the various techniques of surface ornamentation with relevance to garment embellishments.
- To aware of various types of embroidery and methods of producing it.
- To make the students confident about doing surface ornamentation work.

Course Outcomes

- To develop the skills to determine the importance of surface ornamentation
- To gain knowledge on selection of needle, threads and fabrics for embroidery
- To determine the purpose of backing materials
- To gain knowledge on concept of design development and software used in embroidery machines

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LIST OF EXPERIMENTS:

1. Hand Embroidery with motifs – 15 stitches
2. Machine Embroidery - 3 stitches
3. Aari work with sequins and beads -3 stitches
4. Applique – Hand made and ironing method
5. Smocking with different techniques
6. Ribbon work on textiles
7. Preparing samples for Fabric Painting
8. Liquid embroidery (Any 5 method)
9. Preparing samples for Vegetable printing
10. Prepare samples using beads, sequins, zardosi, stone and mirror work
11. Making of Tassels, Fringes and button attachment
12. Quilting and bow techniques
13. Attachment of lace work

REFERENCES:

1. Mary Mathews, Practical clothing construction Part-I “Basic Sewing Processes”

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

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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)

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 and home textiles

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LIST OF EXPERIMENTS:

Designing, Drafting and constructing the following garment and home textiles with the design features.

1. Saree Petticoat / Knicker
2. Salwar / Pants
3. Kameez. / Kurtha
4. Blouse / Shirt
5. Cushion Cover
6. Bread basket
7. Apron
8. Pinch pleat curtain / Wall hanging
9. Tea cozy / Mittens

REFERENCES:

1. Zarapkar, K.R., System of Cutting, Navneet Publications, India.
2. Mary Mathews, Basic Sewing Processes Practical clothing construction Part-I
3. Mary Mathews, "Designing, Drafting & Tailoring" Practical clothing construction Part-II

18BSI509 – INTERNSHIP - II

0003

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.

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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

18BST601 - TEXTILE COSTING AND EXPORT DOCUMENTATION

3 0 0 3

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.

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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.

Course Objectives

- To create awareness and enhance skills in identifying opportunities, develop ideas and start business ventures.
- To emphasize 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

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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, TIIIC, MSME small industries, development corporation (SIDC), SISI, NSIC, NISBUED, SFC.

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

18BSE304(A) - APPAREL PRODUCTION MACHINERY AND EQUIPMENTS

3 0 0 3

Course Objectives

- To enrich the knowledge on various machines and technologies used in apparel industry.
- To impart the knowledge on various tools and accessories that are involved in garment manufacturing.

Course Outcomes

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

- Understand the working principle of machineries involved in apparel manufacture.
- Identify the suitable mechanism and machinery for various applications.
- Gain knowledge about maintenance and adjustments of machines.

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UNIT I

Spreading and Cutting Machines: Fabric spreading requirements and methods; basic concepts of marker making – techniques. Introduction to cutting machines – types and functions of cutting machines – manual, straight knife, round knife, band knife, die cutting, computerized cutting and laser cutting, common defects and remedies in spreading and cutting.

UNIT II

SNLS Sewing Machine: Needle – size, parts, types and their function. Functions - needle bar, bobbin, bobbin case / bobbin hook, throat plate, feed dog, pressure bar, pressure foot, pressure foot lifter, take-up lever, thread tensioner, reverse feed, stitch regulator, thread guide and trimmer. Feeding mechanism - types and functions - stitching cycle - common defects and remedies.

UNIT III

Over-lock and Flat-lock Sewing Machines: Loopers – eye and blind, spreader, trimmers, take-up devices: types, stitch cycle timing diagram, machine adjustments - common defects and remedies.

UNIT IV

Special Attachments in Sewing Machine: Guides-Static and dynamic, folders, hemmers, elastic attachment, special purpose presser foot- compensating, zipper, cording and shirring foot. sequence attachments, trimmers, automatic placket feeder – automatic pocket maker.

UNIT V

Special Purpose Machines: Feed of arm, button sewing, button hole making, bar tacking, overhead mobile creel for UPS, CNC sewing machines, collar and cuff turning machine. Garment folding machines - pressing machines: methods and types- hot iron, steam ironing machine, buck press, carousal press and tunnel press - types and functions of fusing machines.

TEXTBOOKS:

1. Carr, Harold & Latham, Barbara. (1994). The Technology of Clothing Manufacture. New Delhi: Om Books International.
2. Solinger, Jacob. (1988). Apparel Manufacturing Handbook. Nashville, USA: Bobbin Blenheim Media Corporation.

REFERENCES:

1. Laing, R. M. & Webster, J. (1998). Stitches and Seams. England: Woodhead Publishing Limited.
2. Shaeffer, Claire. (2000). Sewing for Apparel Industry. 1st Edition. New Jersey, USA: Pearson's Education.
3. Singer, M. (1991). Sewing Lingerie. Minnesota, USA: Creative Publishing International.
4. Rathinamoorthy, R. and Surjit, R. (2015). Apparel Machinery and Equipments. India: Wood head Publishing, CRC Press.
5. Karthik, T., Ganesan, P. and Gopalakrishnan, D. (2016). Apparel Manufacturing Technology. India: Wood head Publishing, CRC Press.
6. David, J. Tyler. (2009). Carr and Latham's Technology of Clothing Manufacture. 4th Edition. US, New Jersey: John Wiley and Sons – Blackwell Publishers.

Course Objectives

- Acquire knowledge on the properties of water and different garment care technique.
- Analyze the various symbol of care labeling.

Course Outcomes

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

- Gain knowledge on the importance of clothing care and comfort.
- Determine the various care techniques for different fibers.
- Gain understanding on the special washing methods for various fabric structures.

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UNIT I

Laundry soaps and detergents: Water quality parameters – hard and soft water, methods of softening water. Laundry soaps - composition of soap, types of soap, soap less detergents, advantages of detergents.

Garment care: Stiffening agents – starch (cold water and hot water), other stiffening agents, preparation of starch. Laundry blues, their application. Fabric conditioners.

UNIT II

Washing: Principle – suction washing, washing by kneading and squeezing, washing by machine - Process details and machine details. Laundering of different fabrics – cotton and linen, woolens, coloured fabrics, silks, rayon and nylon

UNIT III

Laundry equipment: Steeping and washing – wash board, suction washer, wash boiler - drying equipments – outdoor and indoor types. irons and ironing board – types of iron and its selection.

UNIT IV

Stain removal: Food stains, lead pencil, lipstick, mildew, nose drops, paint, perfume, perspiration, tar, turmeric and kum-kum. Laundering of different fabrics – cotton, linen, woolen, silks, rayon, nylon and coloured fabrics. Drying procedure for different materials.

UNIT V

Special types of laundry – Water proof coats, silk ties, leather goods, furs, plastics, lace. Dry cleaning – using absorbents, using grease solvents - storing – points to be noted. Care labels – washing, bleaching, drying, ironing and different placements of label in garments.

TEXT BOOKS:

1. Dantiyagi, Susheela. (1983). Fundamentals of Textiles and their Care. 4th Edition. New Delhi: Orient Longman Ltd.
2. Tate, Mildred Bertha & Glisson, Oris. (1961). Family Clothing. New York: John Wiley & Sons Inc.

REFERENCES:

1. Wingate, Isabel. B. (1964). Textile Fabrics & their Selection. 5th Edition. New York: Prentice Hall Inc.
2. Deulkar, Durga. (2011). Household Textiles & Laundry Work. New Delhi: Atma Ram & Sons.
3. Noemia, D Souza. (2014). Fabric Care. Reprint. New Delhi: New Age International (P) Ltd. Publishers.

ELECTIVE II

18BSE404 (A) – TECHNICAL TEXTILES

3 0 0 3

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

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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.

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

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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 III

18BSE503 (A) – APPAREL MERCHANDISING AND MARKETING

3 0 0 3

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.

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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 13:9781405/39533.
2. Tim Jackson and David show (2009) Mastering Fashion marketing

Course Objectives

- To learn the importance of supply chain design, planning and operation for every firm.
- To convey how supply chain drives may be used on a conceptual level during supply chain design, planning and operation to improve performance in textile and clothing value chain.

Course Outcomes

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

- Design a supply chain network using various skillsets
- Elaborate on logistics management
- Determine the factors for pricing

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UNIT I

Introduction of SCM – operation v/s supply chain management - concept – Objectives – current scenario in textile industry - SCM decision phases – process view and push / pull view - competitive and SC strategies – efficiencies and responsiveness supply chain; drivers and obstacles; facilities – inventory –information – transportation – sourcing - Pricing; value chain management in textile; case study

UNIT II

Design of supply chain network – Role - Influential factors - Different distribution network - Supply chain networks for apparel products - Facilities management; Demand planning - Collaborative demand forecasting - Planning supply and demand – Measurement of demand for apparels and its impact on textile industry - Inventory management – Cycle inventory - Safety inventory - Optimal level of product availability.

UNIT III

Purchase planning – Make or buy decision – Indigenous and global sourcing – Sourcing decision in practice - Purchasing process and procedures; Development and management of suppliers – Selection – Evaluation - Development

UNIT IV

Transportation - Modes and design options - Trade-offs; Logistics management – Role of logistics in SCM – Integrated logistics management – Impact on the lead time for textile and apparel supply – 3rd and 4th party logistics services and providers – Logistics performance management.

UNIT V

Pricing and revenue management in supply chain – Co-ordination in supply chain information technology and SCM – E-commerce and supply chain – Bar coding – RFID – Best practices in supply chain management cases from textiles and apparel industry.

TEXT BOOKS:

1. Chopra, S. and Mendil. (2004). Supply Chain Management - Strategy, planning and operation. 2nd Edition. Asia: Pearson Education.
2. Sahay, B. S. (1999). Supply Chain Management, for Global Competitiveness. India: Macmillan India Ltd.

REFERENCES:

1. Raguram, G. and Rangarajan, N. (2004). Logistics and Supply Chain Management, Cases and concept. India: Macmillan India Ltd.
2. Monczka, Trent and Handfield. (2008). Purchasing: An Integrated Supply Chain Approach. 1st Edition. South Western, USA: Cengage Learning.
3. Chopra, S., Meindl, P. and Kalra, D . V. (2016). Supply chain management – Strategy, Planning and Operation. 6th Edition. India: Pearson Education.
4. Branch, Alan. E. (2009). Global Supply Chain Management and International Logistics. Roulledge.

ELECTIVE – IV

18BSE504 (A) - FASHION FORECASTING

3 0 0 3

Course Objectives

- To understand the effect of various social and psychological factors on clothing
- To understand about the visual designing in retail stores

Course Outcomes

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

- Understand the forecasting procedure.
- Acquire knowledge on globalization of fashion business.
- Appreciate the global trading environment.

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UNIT I

Factors influencing fashion changes – Psychological needs of fashion, Social psychology of fashion, technological, economical, political, legal and seasonal influence. Role of costume as a status symbol, personality and dress.

UNIT II

Fashion evolution – Fashion cycles, length of cycles, consumer groups in fashion cycles – Fashion leaders, fashion innovators, fashion motivation, fashion victim, fashion followers. Adoption of Fashion – Trickle down, trickle up and trickle across theory.

UNIT III

Visual merchandising of fashion, types of displays – Window displays, interior displays, Elements of display – The merchandise, mannequins and forms, props, signage, lighting merchandising presentation – Tools and techniques - Back drop, forms, fixtures. Fashion show - Definition, planning, budgeting, location, timings, selection of models, collection, set design, music, preparing the commentary, rehearsal

UNIT IV

Digital Portfolio development - Research and surveys - Design development, client material, trend research and exploration - Fashion Presentation - Design Sampling - Commercial Applications. Concept of Mood board, Study board and client board.

UNIT V

Fashion forecasting – Market research, evaluating the collection, fashion services and resources (fashion services, colour services, video services, newsletter services, web sites, directories and references), Design - Historic and ethnic costumes.

TEXT BOOKS:

1. Mary Frances Drake, Janice Harrison Spoone & Herbert Greenwald “Retail Fashion promotion and Advertising”, Prentice Hall Inc, 1991.
2. Mike Easey, “Fashion Marketing”, Blackwell Publishing, 3rd Edition, 2008.
3. Elaine Stone, Jean A Samples, "Fashion Merchandising ", McGraw Hill Education, 5th Edition, 1990.
4. Maurice J Johnson & Evelyne C Moore, “Apparel Product Development”, Prentice Hall Inc, 2001.

REFERENCES:

1. Gini Stephens Frings, “Fashion – From concept to consumer”, Pearson Education, 9th Edition, 2005
2. Kitty G Dickerson, “Inside the Fashion Business”, Pearson Education, 7th Edition, 2002.

18BSE504 (B) - FASHION BRAND MANAGEMENT

3 0 0 3

Course Objectives

- To acquire knowledge on the basic fashion concepts, colour theories and to develop designing skills.
- To gain an insight into various brand management strategies and activities.

Course Outcomes

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

- Recognize the techniques of fashion brand management.
- Develop excellent communication and interpretation skills

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UNIT I

Design: Definition and types, structural and decorative design - Requirements of a good structural and decorative design. Elements of design – Line, shape of form, Colour size and texture. Principles of design: balance, rhythm, emphasis, harmony and proportion.

Colour: Definition - Colour theories – Prang colour chart and Munsell colour system, Dimensions of colour – Hue, value and intensity, standard colour harmonies.

UNIT II

Terms related to the fashion industry : Fashion, style, fad, classic, collection, chic, custom made, mannequin, fashion show, trend forecasting, high fashion cycle, haute couture, couture, couturier, fashion director, fashion editor, knock-off, avant grade, bridge, buying house, apparel fashion merchandising, pre-a-porter, sample.

UNIT III

Factors influencing fashion changes - Psychological needs of fashion - Social psychology of fashion - Technological, economical, political, legal and seasonal influence. Fashion evolution - Fashion cycles - Length of cycles - Consume groups in fashion cycles - Fashion leaders - Fashion innovators - Fashion motivation - Fashion victim - Fashion followers. Adoptions of fashion - Trickle down, trickle up and trickle across theory.

UNIT IV

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 V

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.

TEXT BOOKS:

1. Ruth E Glock & Grace I Kunz, "Apparel Manufacturing: Sewn Product Analysis", Pearson / Prentice Hall Inc., 4th Edition, 2005
2. Mike Easey, "Fashion Marketing", Blackwell Publishing, 3rd Edition, 2008.
3. Marian L Davis, "Visual Design in Dress", Prentice Hall Inc., New Jersey, 3rd Edition, 1996.
4. Kathleen Colussy M & Steve Greenberg, "Rendering fashion, Fabric and Prints", Pearson Education, 1st Edition, 2004.
5. Gini Stephens Frings, "Fashion – From Concept to Consumer", Pearson Education, 9th Edition, 2005

REFERENCES:

1. Sharon lee Tate & Mona S Edwards, "Inside Fashion Design", Pearson Education, 5th Edition, 2004.
2. Ritu Bhargav, "Fashion Illustration & Rendering", B Jain Publishers Pvt. Ltd., 1st Edition, 2005.
3. Kathryn McKelvey & Janine Munslow, "Illustrating Fashion", Wiley-Blackwell Publishers, 2nd Edition, 2007.
4. Sumathi A, "Elements of Fashion and Apparel Design", New Age International Pvt. Ltd., New Delhi, 1st Edition, 2004.