

**GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT**  
**Course Curriculum**  
**GARMENT TECHNOLOGY**  
**(Code: 3332905)**

Diploma Programme in which this courses offered	Semester in which offered
Textile Manufacturing Technology	3rd Semester

### 1. RATIONALE

This subject provides knowledge regarding garment manufacturing technology. With increased production demand, industries have adopted scientific approach for automation in machines and processes. In this course students will be able to develop skills to select fabric, prepare efficient marker planning to minimise wastage. They will also be able to set operation sequence and material handling. Essential efforts are made to satisfy industrial needs by this course.

### 2. LIST OF COMPETENCIES (Programme Outcome according to NBA Terminology):

The course content should be taught and implemented with the aim to develop different skills in the students so that they are able to acquire following competency:

- Prepare a garment as per specification using steps such as selection of fabric, marker planning, spreading, cutting, sewing and stitching operations.

### 3. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks
L	T	P		Theory Marks		Practical Marks		
			C	ESE	PA	ESE	PA	
3	0	2	5	70	30	20	30	150

**Legends:** L-Lecture; T – Tutorial/Teacher Guided Student Activity; P -Practical – Credit;; ESE -End Semester Examination; PA - Progressive Assessment.

#### 4. DETAILED COURSE CONTENTS

Unit	Major Learning Outcomes (Course Outcomes in Cognitive Domain according to NBA terminology)	Topics and Sub-topics
<b>Unit – I Introduction to Garment Technology</b>	1a. State the importance of garment industry. 1b. Select suitable fabric for the end use 1c. Explain the manufacturing Process.	1.1 Importance of garment industry in present Textile trends. 1.2 Factor affecting selection of fabrics for Final end product. 1.5 Stages of Garment manufacturing Process.
<b>Unit– II Pattern Making and Grading</b>	2a. Selection of suitable design pattern for garment. 2b. Perform grading of pattern.	2.1 Pattern design, Sample making. 2.2 Grading of pattern.
<b>Unit–III Marking, Spreading and Cutting</b>	3a. Prepare Marker planning. 3b. Differentiate manual and automatic spreading 3c. Identify different types of cutter	3.1 Requirements of marker planning. 3.2 Efficiency of marker plan. 3.3 Methods of marker planning. 3.4 Requirements of spreading. 3.5 Methods of spreading. 3.6 Types of Fabric packages. 3.7 Objectives of cutting. 3.8 Methods of cutting.
<b>Unit-IV Sewing</b>	4a. List objects of sewing 4b. Explain different types of Seams and Stitches 4c. List seam Properties 4d. Explain sewing \ Problems 4e. Identify types of sewing threads.	4.1 Objectives of sewing 4.2 Properties of Seams 4.3 Types of Seam. 4.4 Types of Stitch. 4.5 Problems of stitch formations & puckers. 4.6 Problems of damage to the fabric along the Stitch line 4.7 Testing for sewing and tailorability 4.8 Sewing threads.
<b>Unit-V Sewing Machinery</b>	5a. Identify different types of feed mechanism. 5b. Differentiate sewing m/c needles.	6.1 Basic sewing m/c and associated work aids 6.2 Different types of feed mechanism 6.3 Sewing machine needles.
<b>Unit-VI CAD/ CAM and Fusing Technology</b>	6a. Compare manual vs CAD/CAM. 6b. Describe Computerized grading, Marker Planning and cutting. 6c. Explain fusing process.	7.1 Compare Manual Vs CAD/CAM. 7.2 Advantages of CAD/CAM. 7.3 Computerized Grading and Marker planning. 7.4 Computer controlled cutting. 7.5 Requirement of Fusing. 7.6 Methods of Fusing.

## 5. SUGGESTED SPECIFICATION TABLE WITH HOURS & MARKS (THEORY)

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total
I.	Introduction to Garment Technology	04	2	3	2	07
II.	Pattern Making and Grading	03	2	3	2	07
III.	Marking, Spreading and cutting	12	4	8	6	18
IV.	Sewing	12	4	8	6	18
V.	Sewing Machinery	06	2	5	3	10
VI.	CAD/ CAM and Fusing Technology	06	2	5	3	10
<b>Total</b>		42	16	32	22	<b>70</b>

**Legends:** R = Remember; U = Explain; A = Apply and above levels (Bloom's revise taxonomy)

**Note:** This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

## 6. SUGGESTED LIST OF EXERCISES/PRACTICAL

The practical/exercises should be properly designed and implemented with an attempt to develop different types of practical skills (**Course Outcomes in psychomotor domain**) so that students are able to acquire the competencies (Programme Outcomes). Following is the list of practical exercises for guidance.

**Note:** Here only Course Outcomes in psychomotor domain are listed as practical/exercises. However, if these practical/exercises are completed appropriately, they would also lead to development of **Programme Outcomes/Course Outcomes in affective domain** as given in a common list at the beginning of curriculum document for this programme. Faculty should refer to that common list and should ensure that students also acquire those Programme Outcomes/Course Outcomes related to affective domain.

S. No.	Unit No.	Practical /Tutorial	No of hours
1	I.	Obtain different characteristics of fabric.	02
2	II.	Prepare Grading of pattern.	02
3	III.	Prepare marker planning for a given garment.	02
4	III.	Demonstrate spreading process	02
5	III.	Draw sketches of different cutting m/c.	04
6	IV.	Demonstrate different types of seams.	04
7	IV.	Demonstrate different types of stitches	04
8	V.	Draw sketches of feed systems	02
9	V.	Demonstrate sewing operation	04
10	V.	Demonstrate folding and packing of garment	02

11	V.	Demonstrate fusing process	04
12	VI.	Demonstrate use of CAM in garment technology.	02
Total			34

## 7. SUGGESTED LIST OF PROPOSED STUDENT ACTIVITIES

Following is the list of proposed student activities like: course/topic based seminars, internet based assignments, teacher guided self learning activities, course/library/internet/lab based mini-projects etc.

- i. Select correct fabrics for end use.
- ii. Prepare marker planning.
- iii. Perform spreading, cutting of fabrics and stitching of Garment.
- iv. Visit to garment unit, and preparing report with sketches.

## 8. SPECIAL INSTRUCTIONAL STRATEGY (If Any)

- i. Show educational video/animation films on different aspects of garment manufacturing.
- ii. Give hands on practice on CAD /CAM software.
- iii. Ask students to prepare “marker planner” and “model pattern pieces”.
- iv. Arrange visit to a nearby garment factory.

## 9. SUGGESTED LEARNING RESOURCES

### A. List of Books

S.No.	Title of Books	Author	Publication
1	Garment Technology clothes	Carr& Lathan	Black well publisher England
2	Stitches & Seam	R.M. & Webster J	Laing ISBN : 1870812735
3	Clothing Technology from fibre to fashion	Kilgus R.	ISBN : 3808562218
4	Cutting & draping occasion clothes	Clooke	ISBN : 0713483326
5	Introduction to clothing manufacture.	Cooklin	ISBN : 063202618
6	An introduction to quality control for the apparel industry	Mehta P.V.	ISBN:0824786793

### B. List of Major Equipment/ Instrument

Textile Laboratory – Cutting machine, Sewing machine, CAD /CAM software.

**C. LIST OF SOFTWARE /LEARNING WEBSITES-**

Search engines could be used to locate textile related sites. Following are some of the useful websites.

- i. [www.textileassociationindia.org](http://www.textileassociationindia.org)
- ii. [www.cottonyarnmarket.net/OASMTP/textile\\_technology.htm](http://www.cottonyarnmarket.net/OASMTP/textile_technology.htm)
- iii. [http://www.sitra.org /](http://www.sitra.org/)
- iv. [www.itamma.org /](http://www.itamma.org/)
- v. [http://www..textilefashionstudy.com /](http://www..textilefashionstudy.com/)
- vi. <http://textilelearner.blogspot.in>
- vii. [www.textileschool.com](http://www.textileschool.com)
- viii. [www.fibre2fashion.com /](http://www.fibre2fashion.com/)
- ix. [www.garmento.org/process & skills](http://www.garmento.org/process_&_skills)
- x. <http://www.slideshare.net/DelwinArikatt/seams-used- in- garments>
- xi. <http://www.scribd.com/doc/44827468/Different-Types- of- Stitches>
- xii. <http://www.scribd.com/doc/45279069/Different-types- of- Seam>

**10. COURSE CURRICULUM DEVELOPMENT COMMITTEE****Faculty Members from Polytechnics**

- **Prof. V. N. Soni**, HOD Textile Manufacturing , R.C Technical Institute, Ahmedabad
- **Prof. R. T. Patel**, Lecturer in Textile Manufacturing, R.C Technical Institute, Ahmedabad
- **Prof. (Ms.) S. S. Parmar**, Lecturer in Textile Manufacturing, R.C Technical Institute, Ahmedabad
- **Prof. S. M. Zala**, Lecturer in Textile Manufacturing, Shri B.P.T.I, Bhavanagar,

**Co-ordinator and Faculty Member from NITTTR Bhopal**

- **Dr. C. K. Chugh**, Professor, Department of Mechanical Engineering
- **Prof. S. K. Gupta**, Professor and Coordinator for State of Gujarat