

GUJARAT TECHNOLOGICAL UNIVERSITY (GTU)

Competency-focused Outcome-based Green Curriculum-2022 (COGC-2022)
Semester - V

Course Title: Knitted Garment
(Course Code: 4355108)

Diploma programme in which this course is offered	Semester in which offered
Computer aided costume design and dress making	5 th Semester

1. RATIONALE

A clear need had been perceived for information on Knitted apparel manufacturing technology, related to current practice in the clothing industry. This course will provide guidance for Knitted garment industry. This course is helpful for understanding Knit wear technology used in garment manufacturing.

2. COMPETENCY

The purpose of this course is to help the student to attain the following industry identified competency through various teaching learning experiences:

- Create different Knit wear by selecting appropriate fabrics, pattern and technique of construction.

3. COURSE OUTCOMES (COs)

The practical exercises, the underpinning knowledge and the relevant soft skills associated with the identified competency is to be developed in the student for the achievement of the following COs:

- Design stylish knitted casual garment.
- Design innovative knitted swim wear.
- Illustrate comfortable knitted night wear and Lingerie garment.
- Create different types of garment using appropriate knitted fabrics.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P/2)	Examination Scheme				
L	T	P		Theory Marks		Practical Marks		Total Marks
			C	CA	ESE	CA	ESE	
-	-	4	2	-	-	50	50	100

()*: Out of 50 marks under the theory CA, 10 marks are for assessment of the micro-project to facilitate integration of COs and the remaining 40 marks to be taken during the semester for assessing the attainment of the cognitive domain UOs required for the attainment of the COs.

Legends: **L**-Lecture; **T** – Tutorial/Teacher Guided Theory Practice; **P** - Practical; **C** – Credit, **CA** - Continuous Assessment; **ESE** - End Semester Examination.

5. SUGGESTED PRACTICAL EXERCISES

The following practical outcomes (PrOs) are the sub-components of the COs. *Some of the PrOs marked '**' (in approx. Hrs column) are compulsory, as they are crucial for that particular CO at the 'Precision Level' of Dave's Taxonomy related to 'Psychomotor Domain'.*

Sr. No.	Practical Outcomes (PrOs)	Unit No.	Approx. Hrs. required
1	1. Design casual wear (Any four designs from following with detailing in A3 size sheet) 1.1 T-Shirt 1.2 Peplum top 1.3 Top 1.4 Tube top 1.5 Cami style top 1.6 Blouson top 1.7 Crop top 1.8 Tank top 1.9 Cinched waist top 1.10 Cardigan 1.11 Boho style top 1.12 Smoked top 1.13 Playsuits/Jumpsuits	I to III	10
2	2. Design Swim wear (Any four designs from following with detailing in A3 size sheet) 2.1 Bikini 2.2 Retro bikini 2.3 Micro bikini 2.4 Bandeau 2.5 One piece 2.6 Monokini 2.7 Jenkin 2.8 Boy short 2.9 Skirt bottom 2.10 Long sleeved 2.11 Burkini	I to III	10
3	3. Design Night Wear (Any four designs from following with detailing in A3 size sheet) 3.1 PJ set 3.2 Sleep shirts and 3.4 Night dress 3.5 Shorts and Tees 3.6 Night robe 3.7 Maxi Dresses 3.8 Capri	I to III	10

Sr. No.	Practical Outcomes (PrOs)	Unit No.	Approx. Hrs. required
4	6. Design Lingerie (Any four designs from following with detailing in A3 size sheet) 6.1 Baby doll 6.2 Basque 6.3 Bloomers 6.4 Body stockings 6.5 Brassiere 6.6 Bustier 6.7 Camisole 6.8 Chemise 6.9 Corset 6.10 G-string 6.11 Thong 6.12 Garter 6.13 Negligee 6.14 Nightie 6.15 Panties 6.16 Camisoles	I to III	10
5	Design, cut and stitch upper and lower garment of Night wear or casual wear using knit fabrics mentioned in theory.	II to IV	16

Note

- i. More **Practical Exercises** can be designed and offered by the respective course teacher to develop the industry relevant skills/outcomes to match the COs. The above table is only a suggestive list.
- ii. The following are some **sample** 'Process' and 'Product' related skills (more may be added/deleted depending on the course) that occur in the above listed **Practical Exercises** of this course which are embedded in the COs and ultimately the competency.

Sr. No.	Sample Performance Indicators for the PrOs	Weightage in %
1	Prepare a plan design/garment after analysis of the given task	20
2	Create the design/garment as per the laid down procedure	50
3	Finishing the final design/garment	20
4	Presentation of the garment/garment	10
	Total	100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

This major equipment with broad specifications for the PrOs is a guide to procure them by the administrators to usher in uniformity of practical in all institutions across the state.

Sr. No.	Equipment Name with Broad Specifications	PrO. No.
1	Overlock machine for overlocking (4 thread, 2 needle flatlock) side seam, armhole and shoulder seam.	1

Sr. No.	Equipment Name with Broad Specifications	PrO. No.
2	Flatlock - 2 needle 3 to 4 thread flatlock machine for bottom hemming.	1

7. AFFECTIVE DOMAIN OUTCOMES

The following *sample* Affective Domain Outcomes (ADOs) are embedded in many of the above-mentioned COs and PrOs. More could be added to fulfil the development of this course t competency.

- a) Work as a leader/a team member.
- b) Follow ethical practices.

The ADOs are best developed through the laboratory/field-based exercises. Moreover, the level of achievement of the ADOs according to Krathwohl's 'Affective Domain Taxonomy' should gradually increase as planned below:

- i. 'Valuing Level' in 1st year
- ii. 'Organization Level' in 2nd year.
- iii. 'Characterization Level' in 3rd year.

8. UNDERPINNING THEORY

The major underpinning theory is given below based on the higher level UOs of *Revised Bloom's taxonomy* that are formulated for development of the COs and competency. If required, more such higher level UOs could be included by the course teacher to focus on attainment of COs and competency.

Unit	Unit Outcomes (UOs) (4 to 6 UOs at different levels)	Topics and Sub-topics
Unit – I Introduction to knit wear Apparels	1a. Define Knit wear 1b. classify knitwear based on garment type, fabrics and components of fashion	1.1 Classification of Knit apparel 1.1.1 According to garment type 1.1.2 According to fabrics 1.1.3 Components of fashion
Unit – II Weft knits	2a Identify weft knitted fabrics 2b Classify weft knitted fabrics	2.1 Classification of weft knitted fabrics 2.1.1. Single jersey, Rib, Purl knit, Interlock, Double knit fabric, High pile knit 2.2.2. Fully fashioned knit 2.2.3. Knitted terry and Knitted velour 2.2.4. Knitted jacquard, Knitted intarsia and Pique fabric
Unit – III Warp knits	3a Identify types of warp knitted fabric. 3b Classify warp knitted fabrics. 3c Explain the properties of different warp knitted fabric 3d Distinguish raschel and tricot fabric.	3.1 Classification of warp knitted fabric 3.2 Types and properties of warp knitted fabric 3.3 Fabric characteristics of Tricot fabric, Raschel knit fabric 3.4 Difference between raschel and tricot fabric
Unit– IV Knitted garments	4. Describe different types of knitted garment.	4.1 Different types of knitted garment. 4.1.1 Fully cut 4.1.2. Stitch shaped cut 4.1.3 Fully Fashioned 4.1.4 Integral

9. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
	NA					

Legends: R=Remember, U=Understand, A=Apply and above (Revised Bloom's taxonomy)

10. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related **co-curricular** activities which can be undertaken to accelerate the attainment of the various outcomes in this course. Students should conduct following activities in group and prepare reports of about 5 pages for each activity. They also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- a) Visit to Knit Wear Industry.
- b) Visit to mall to study knit wear patterns.

- c) Internet based activities.
- d) Collection of different types of knit swatches.

11. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a) Massive open online courses (**MOOCs**) may be used to teach various topics/sub topics.
- b) Guide student(s) in undertaking micro-projects.
- c) '**L**' in **section No. 4** means different types of teaching methods that are to be employed by teachers to develop the outcomes.
- d) About **20% of the topics/sub-topics** which are relatively simpler or descriptive in nature is to be given to the students for **self-learning**, but to be assessed using different assessment methods.
- e) With respect to **section No.10**, teachers need to ensure to create opportunities and provisions for **co-curricular activities**.
- f) Guide students on how to address issues on environment and sustainability.
- g) Show video films of different cutting processes used in knitted garment industry.

12. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her in the beginning of the semester. In the first four semesters, the micro-project are group-based (group of 3 to 5). However, **in the fifth and sixth semesters**, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more Cos which are in fact, an integration of PrOs, Uos and ADOs. Each student will have to maintain dated work diary consisting of individual contribution in the project work and give a seminar presentation of it before submission. The duration of the microproject should be about **14-16 (fourteen to sixteen) student engagement hours** during the course. The students ought to submit micro-project by the end of the semester to develop the industry-oriented Cos.

A suggestive list of micro-projects is given here. This has to match the competency and the Cos. Similar micro-projects could be added by the concerned course teacher:

- a) Create fusion party wear using knitted fabric.
- b) Prepare a mood board according to theme and design garment along with collection of appropriate fabric swatches.
- c) Design any 5 different style of pattern for picnic wear.(Knitted garment)
- d) Undertake market survey to analyse various knit wear garments and submit the report.

13. SUGGESTED LEARNING RESOURCES

S. No.	Title of Book	Author	Publication with place, year and ISBN
1	Technology of clothing Manufacturers	Harold Carr & Barbera Latham	Blackwell Science

S. No.	Title of Book	Author	Publication with place, year and ISBN
2	Circular Knitting Technology	Spencer	Bobbin Media Corporation, 1988
3	Managing Quality in Apparel Industry	Mehta &Bharadwaj	New Age Publisher, Delhi
4	Handbook of Quality	Joseph Juran	Mc Graw Hill ISBN 978-0-07-0162973-7
5	Garment manufacturing	Prasanta Sarkar	Online Clothing Study. Gurgaon, India.
6	Knitted clothing technology	Terry Brackenbury	Blackwell science
7	Pattern cutting for Lingerie, Beachwear and Leisurewear.	Ann Haggart	Blackwell science

14. SOFT WARE/LEARNING WEBSITES

*<https://www.shutterstock.com/image-vector/swimsuits-models-popular-swimwear-types-women-440269225>

*<https://belawave.com/blogs/beach-life/triangle-sets>

*https://www.google.com/search?q=types+of+Night+Wear++with+name&source=lmns&bih=496&biw=1072&hl=en&sa=X&ved=2ahUKewiWgrbU6rP-AhWBmeYKHYAPDvcQ_AUoAHoECAEQAA

* <https://www.textileblog.com/different-types-of-lingerie-with-pictures/>

15. PO-COMPETENCY-CO MAPPING

Semester V	Knitted Garment (Elective-I) (Course Code: 4355109)						
	Pos						
Competency & Course Outcomes	PO 1 Basic & Discipline specific knowledge	PO 2 Problem Analysis	PO 3 Design/development of solutions	PO 4 Engineering Tools, Experimentation & Testing	PO 5 Engineering practices for society, sustainability & environment	PO 6 Project Management	PO 7 Life-long learning
<u>Competency</u>	Create different Knit wear by selecting appropriate fabrics, pattern and technique of construction.						
<u>Course Outcomes</u>							
Co-1 Design stylish knitted casual garment.	3	2	2	2	2	3	3
Co-2 Design innovative knitted swim	3	2	2	2	2	3	3

wear.							
Co-3 Illustrate comfortable knitted night wear and Lingerie garment.	3	2	2	2	2	3	3
Co-4 Create different types of garments using appropriate knitted fabrics.	3	3	3	3	2	3	3

Legend: '3' for high, '2' for medium, '1' for low and '-' for no correlation of each CO with PO.

16. COURSE CURRICULUM DEVELOPMENT COMMITTEE

GTU Resource Persons

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