



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma Engineering

Level: Diploma

Branch: Computer Aided Costume Design and Dress making

Subject Code: DI05051061

Subject Name: Sustainable Fashion

w. e. f. Academic Year:	2026-27
Semester:	5 th
Category of the Course:	PEC-04

Prerequisite:	Students should have basic knowledge of fashion design, textiles and garment construction, along with an understanding of the fashion value chain and key sustainability concepts such as eco-friendly materials, recycling and ethical practices.
Rationale:	The fashion industry is one of the largest contributors to environmental pollution and social issues such as resource depletion, waste generation and unethical labour practices. With increasing global awareness about sustainability and responsible consumption, it is essential for fashion students to understand eco-friendly materials, ethical production and sustainable design approaches. This course provides knowledge of sustainable practices across the fashion value chain, including materials, design, production, business models, and future innovations. It helps students develop awareness, responsibility, and skills required to contribute towards a more sustainable and ethical fashion industry, aligned with global initiatives such as United Nations Sustainable Development Goals.

Course Outcome:

After Completion of the Course, Students will able to:

Sr. No	Course Outcomes	RBT Level
01	Describe the concept, principles, and impacts of sustainable fashion.	R
02	Analyze sustainable materials, textiles, and innovations in textile development.	U
03	Apply sustainable design principles including zero-waste, lifecycle thinking, and durable garment development.	A
04	Evaluate ethical production practices and supply chain systems focusing on labor rights, transparency, and environmental impact.	E
05	Develop sustainable fashion strategies and analyze future trends, technologies, and circular practices for innovation.	C

**Revised Bloom's Taxonomy (RBT)*



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma Engineering

Level: Diploma

Branch: Computer Aided Costume Design and Dress making

Subject Code: DI05051061

Subject Name: Sustainable Fashion

Teaching and Examination Scheme:

Teaching Scheme (in Hours)			Total Credits L+T+ (PR/2)	Assessment Pattern and Marks				Total Marks
L	T	PR	C	Theory		Tutorial / Practical		
				ESE (E)	PA(M)	PA(I)	ESE (V)	
2	0	4	4	70	30	20	30	150

Course Content:

Unit No.	Content	No. of Hours	% of Weightage
1.	Unit-I Introduction to Sustainable Fashion 1.1 Definition, history, evolution and principles of sustainable fashion. 1.2 Linear vs. Circular model of sustainability in fashion. 1.3 Three pillars of sustainability in fashion (environmental, social, economic). 1.4 Environmental and social impacts of the fashion industry 1.5 Key terms and concepts (slow fashion, circular fashion, etc.). 1.6 Importance of ethical fashion practices. 1.7 Overview of global sustainability initiatives in fashion.	08	25
2.	Unit-II Sustainable Materials and Textiles 2.1 Natural vs. synthetic fibers. 2.2 Organic and regenerative textiles. 2.3 Recycled and upcycled materials. 2.4 Eco-friendly dyeing and finishing processes. 2.5 Certifications and standards for sustainable materials. 2.6 Innovations in sustainable textile development. 2.7 Comparison between conventional and sustainable textiles.	06	20
3.	Unit-III: Sustainable Design Principles 3.1 Zero-waste and minimal waste design techniques. 3.2 Modular and multifunctional fashion design. 3.3 Designing for durability and recyclability. 3.4 Integration of tradition and craftsmanship.	04	15
4.	Unit-IV: Ethical Production and Supply Chain 4.1 Fair trade and labor rights in fashion. 4.2 Transparency and traceability in supply chains.	04	10



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma Engineering

Level: Diploma

Branch: Computer Aided Costume Design and Dress making

Subject Code: DI05051061

Subject Name: Sustainable Fashion

	4.3 Local and small-scale production models (handloom sector). 4.4 Reducing carbon footprint in manufacturing. 4.5 Technology for ethical sourcing. 4.6 Social responsibility and community impact.		
5.	Unit-IV: Business Models and Branding & Future Trends 5.1 Sustainable fashion business models -rental, resale, made-to-order etc. 5.2 Branding & Marketing-Sustainable brand identity, green marketing, avoiding greenwashing, storytelling. 5.3 Consumer & Trust- Conscious consumer behavior, transparency and trust-building. 5.4 Innovation & Policy- Fashion tech innovations, policy and regulations. 5.5 Impact Measurement- Tools and metrics for sustainability assessment.	08	30
	Total	30	100

Suggested Specification Table with Marks (Theory):

Distribution of Theory Marks (in %)					
R Level	U Level	A Level	N Level	E Level	C Level
15	55	15	-	-	15

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)

References/Suggested Learning Resources:

(a) Books:

1. Sustainable Fashion and Textiles – Kate Fletcher
2. Fashion & Sustainability: Design for Change – Kate Fletcher & Lynda Grose
3. The Sustainable Fashion Handbook – Sandy Black
4. Fashion polis by Dana Thomas.
5. Zero Waste Fashion Design by Timo Rissanen and Holly McQuillan.

(b) Open-source software and website:

1. https://en.wikipedia.org/wiki/Sustainable_fashion
2. <https://textileexchange.org/>
3. <https://www.commonobjective.co/>
4. <https://makeuse.nz/>
5. <https://www.birgittahelmersson.com/pages/book>



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma Engineering

Level: Diploma

Branch: Computer Aided Costume Design and Dress making

Subject Code: DI05051061

Subject Name: Sustainable Fashion

6. <https://thefoldline.com/blogs/trending/zero-waste-sewing-patterns>
7. <https://www.pearlglobal.com/sustainable-fabrics-types-benefits/>
8. <https://www.gartexindia.com/sustainable-textiles-redefining-the-future-of-industry/>
9. <https://medium.com/theymakedesign/sustainable-branding-9e9eb28b4c0d>
10. <https://stockiqtech.com/blog/ethical-supply-chains/>
11. <https://www.the-future-of-commerce.com/2020/01/22/ethical-supply-chain-definition-stats/>
12. <https://www.designorate.com/principles-of-sustainable-design/>
13. <https://www.google.com/search?q=Sustainable+Materials+and+Textiles&oq=Sustainable+Materials+and+Textiles&aqs=chrome..69i57j0i22i30l3j0i390i512i650l2j0i512i546l3.1096j0j7&sourceid=chrome&ie=UTF-8>
14. <https://nccf.in/sustainability-standard/>
15. <https://earth.org/fast-fashions-detrimental-effect-on-the-environment/>
16. https://pomp.store/blogs/journal/linear-vs-circular-fashion-model?srltid=AfmBOraqkLCIK6LRo0PJPsqV08znn__Ehl_reCIYZ8a0305cRbLCvrh

Suggested Course Practical List:

Sr. No	Practical List	Hours
1.	Case Study of a Sustainable Brand. (Select a brand and analyze and prepare a report: Materials used, Production process, Ethical practices etc.)	06
2.	Impact Analysis of Fast Fashion. (Compare fast fashion vs. sustainable fashion and prepare a report to understand Environmental impact)	04
3.	Fabric Identification of Sustainable Materials and Textiles and prepare a report.	06
4.	Create yarn/fabric from waste material.	02
5.	Create a paper pattern layout with zero wastage.	04
6.	Create new product from old garment.	08
7.	Draw supply chain from raw material to consumer.	02
8.	Study local artisan / small handloom unit to collect data: • Production process • Materials used • Benefits to community Prepare field report based on collected data.	08
9.	Create your own Sustainable brand and logo.	06
10.	Design advertisement/poster which promote eco-friendly product.	02



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma Engineering

Level: Diploma

Branch: Computer Aided Costume Design and Dress making

Subject Code: DI05051061

Subject Name: Sustainable Fashion

11.	Create a 3R infographic poster showing: Reduce, Reuse, Recycle symbols, Fashion examples and short slogans.	04
12.	Make old garments into one new contemporary product.	08
	TOTAL	60

List of Laboratory/Learning Resources Required:

Clothing lab with drawing tables

Suggested Project List:

1. **Upcycling Project**- Transforming old garments into one new contemporary product. Can use AI for Upcycling ideas.
2. **Natural Dyeing**- Apply eco-friendly dyeing and make an article/garment.
3. **Multifunctional Garment Design**- Sketch garment with multiple uses
4. **Sustainable Portfolio Development**- Build professional Sustainable portfolio on any one theme.
5. **Industry Research Assignment**- Research innovations like circular fashion.
6. **PowerPoint presentation**-5P'S of sustainability, 6 P'S of sustainability, 3 P'S of sustainability- People, Planet, and Profit etc.
7. **Use of AI** -AI Applications in Sustainable Fashion

Suggested Activities for Students:

- a. Power point presentation
- b. Internet based assignments
- c. Teacher guided self-learning activities
- d. Library/internet/lab based mini-project etc.

* * * * *