

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT

**COURSE CURRICULUM
COURSE TITLE: TEXTILE SCIENCE II
(Code: 3345102)**

Diploma Programme in which this course is offered	Semester in which offered
Computer Aided costume Design and Dress Making	4 th Semester

1. RATIONALE

Costume designs and dress making also requires sufficient knowledge and skills about principles of dyeing, printing and its operations, materials, equipment and process. Therefore diploma holders in CACDDM should be able to execute various recipes for dyeing. The course in Textile Science II helps in developing skills related to dying of textile fiber and various types of printing methods available.

2. COMPETENCY

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

- **Select appropriate dyes and printing method for given textile fibre and fabric respectively**

3. COURSE OUTCOMES:

The theory should be taught and practical should be carried out in such a manner that students are able to acquire required learning out comes in cognitive, psychomotor and affective domain to demonstrate following course outcomes.

- Explain the process of natural dyeing on fibres
- Explain blending of various fibre
- Explain dyeing techniques
- Explain different methods & styles of Printing
- Explain working of dyeing machineries
- Identify defects generated due to dyeing

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				
L	T	P		Theory Marks		Practical Marks		Total Marks
L	T	P	C	ESE	PA	ESE	PA	
4	0	0	4	70	30	0	0	100

Legends: L-Lecture; T – Tutorial; P -Practical; C – Credit;; ESE -End Semester Examination; PA - Progressive Assessment.

5. DETAILED COURSE CONTENTS

Unit	Major Learning Outcomes (in cognitive domain)	Topics and Sub-topics
Unit – I Introduction to Dyes	1a. Explain principle & properties of various dyes	1.1 Dyes & its classification 1.1.1 Principles & Properties of dyes 1.1.2 Application of basic dyes. 1.1.3 Different classes of Synthetic dyes
Unit-II Introduction to Natural Dyes	2a. Describe the application of natural dyes on fibers	2.1 Introduction to natural dyes/eco-friendly dyes 2.2 Application of natural dyes on different fibers.
Unit-III Introduction to Blending	3a. Explain blending of various fiber	3.1 Introduction concept of blending 3.2 Advantages of blending 3.3 Types of blends 3.3.1 Cots/wool 3.3.2 Terry/cot 3.3.3 Terry/wool 3.3.4 Terry/viscose 3.3.5 Acrylic/wool 3.3.6 Other commercial varieties
Unit-IV Dyeing of different fabrics	4a. Explain dyeing techniques	4.1. Different dyeing techniques 4.1.1 Stock/ Fiber dyeing 4.1.2 Yarn dyeing 4.1.3 1Piece /Fabric dyeing 4.1.4 Union & Cross dyeing 4.1.5 Garment dyeing 4.1.6 Dope/Solution dyeing
Unit-V Introduction to Printing	5.a Explain different methods & styles of Printing	5.1 Methods of Printing 5.1.1 Block Printing 5.1.2 Stencil Printing 5.1.3 Screen Printing 5.1.4 Roller printing 5.2 Styles of Printing 5.2.1 Direct style of Printing 5.2.2 Resist style of Printing 5.2.3 Tie & dye 5.2.4 Batik Printing 5.2.5 Discharge style of Printing
Unit-VI Dyeing Machinery	6.a Explain working of dyeing machineries	6.1 Description and working of: 6.1.1 Beam dyeing machines 6.1.2 Jet dyeing machines 6.1.3 Soft flow dyeing machines 6.1.4 Semi continuous dyeing

Unit	Major Learning Outcomes (in cognitive domain)	Topics and Sub-topics
		machines 6.1.5 Continuous dyeing machines.
Unit-VII Dyeing Defects	7a. Identify defects generated due to dyeing	7.1 Defects in dyeing of synthetics, naturals, and its blends 7.2 Remedial Action for removing defects.
Unit-VIII Latest Developments	8a. Appreciate latest developments in the field of dyeing	8.1 Latest Developments in dyeing and printing.

6. 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 Dyes	6	2	4	2	8
II	Introduction to Natural Dyes	5	2	3	2	7
III	Introduction to Blending	9	4	4	3	11
IV	Dyeing of different fabrics	8	4	4	2	10
V	Introduction to Printing	10	2	6	4	12
VI	Dyeing Machinery	8	3	4	3	10
VII	Dyeing Defects	5	2	2	2	06
VIII	Latest Developments	5	2	2	2	06
Total Hrs		56	21	29	20	70

Legends: R = Remember; U= Understand; A= Apply and above levels (Revised Bloom's 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.

7. SUGGESTED LIST OF PRACTICALS/EXERCISES

NIL

8. SUGGESTED LIST OF PROPOSED STUDENT ACTIVITIES

Following is the list of proposed student activities such as:

- i. Visit to nearby dyeing/printing unit
- ii. Market survey with specifications of dyeing/printing material available in market
- iii.

9. SPECIAL INSTRUCTIONAL STRATEGIES (If any)

- i. course/topic based seminars,
- ii. internet based assignments,
- iii. teacher guided self-learning activities,
- iv. course/ library/internet/lab based mini-projects etc. (These could be individual or group-based.)

10. SUGGESTED LEARNING RESOURCES

A. List of Books

S. No.	Author	Title of Books	Publication
1	V.A Shenai;	Technology of Dyeing	Sevak Publishers, Mumbai.
2	E.R Trotman;	Dyeing and Chemical Technology of Fibrous Material	B.I.Production, New Delhi.
3	Arora.	A Text Book of Dyes	
4	R.S Paryag.	Dyeing and Synthetic fabrics	
5	Marjory L. Joseph	Introductory textile science	

B. List of Major Equipment/ Instrument

N/A

C. List of Software/Learning Websites

- i. http://wikipedia.org/wiki/Textile_dyeing
- ii. <http://textilefashionstudy.com>
- iii. <http://textilelearner.blogspot.in>

11. COURSE CURRICULUM DEVELOPMENT COMMITTEE

Faculty Members from Polytechnics

- **Prof. Dr. (Ms) J. R. Jhala**, I/c.H.O.D. CACDDM, A.V.P.T.,Rajkot
- **Prof. Dr. (Ms) F. V. Kugasiya**, Lecturer CACDDM, GGP, Ahmedabad
- **Dr. (Ms.) R. O. Yadav**, Lecturer CACDDM C U Shah Polytechnic, Surendranagar
- **Prof. (Ms) B. M. Patel**, Lecturer CACDDM, GGP, Ahmedabad
- **Prof. (Ms) S. S. Bambhania**, Lecturer CACDDM, Sir B.P.T.I., Bhavnagar.

Faculty Members from NIFT Gandhinagar.

- **Prof. Pavan Godiawala**, Director and Professor, Fashion Technology
- **Prof. Nupur Chpora**, Assistant Professor, Fashion Technology

Coordinator and Faculty Members from NITTTR Bhopal

- **Dr Shashi Kant Gupta**, Professor and Coordinator for State of Gujarat.
- **Prof. (Mrs.) Chanchal Mehra**, Associate Professor, Department of Vocational Education and Entrepreneurship Development