

Bachelors in Arts with With Community Science
Category-V

DISCIPLINE SPECIFIC ELECTIVE COURSE – DSC-FAS 6-HSC:
TEXTILE COLOURATION AND FINISHING

CREDIT DISTRIBUTION, ELIGIBILITY, PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit distribution of the course			Eligibility Criteria	Prerequisite of the course
		Lecture	Tutorial	Practical		
Textile Colouration and Finishing	4	2	0	2	NIL	NIL

Learning Objectives

- To provide comprehensive knowledge about the concepts of dyeing and printing.
- To develop understanding of various kinds of finishing processes on textile fabrics.

Learning Outcomes

The students would be able to:

- Classify and select dyes based on suitability and fastness for different fabrics.
- Explain various dyeing procedures and dyeing methods and their effect on finished fabrics.
- Describe the importance and methods of testing colour-fastness of dyes.
- Differentiate between and explain the styles and methods of printing.
- Explain the various routine and special finishing of textiles.
- Identify the common dyeing, printing and finishing defects.
- Apply dyeing and printing techniques such as tie and dye, block printing, screen printing and batik on fabrics

THEORY
(Credits 2; Hours 30)

UNIT I: Textile Dyeing – Dyes, Methods and Fastness

8 Hours

This unit covers classification of dyes and their application on different textile fibres, dyeing procedures, different stages of dyeing, and colour fastness.

- Classification of dyes – natural and synthetic dyes
- Major dye classes and their suitability on different fibres – direct, reactive, acid, vat, disperse dyes and pigments
- Dyeing procedures for direct, reactive and acid dyes
- Methods of dyeing – solution, fibre, yarn, fabric and garment dyeing and their effect on the finished fabric

UNIT II: Textile Printing – Styles, Methods and Defects

10 Hours

This unit deals with styles and methods of printing. Newer printing technologies and common dyeing and printing defects are also discussed.

- Styles of printing – Direct, Discharge, Dyed, and Resist
- Methods of printing – Stencil, Block, Roller, Screen, Rotary Screen, Heat Transfer, Digital, Flock
- Emerging and newer printing technologies
- Common dyeing and printing defects

UNIT III: Textile Finishes

6 Hours

This unit focuses on common routine and functional finishes applied on fabrics. Common finishing defects are also included.

- Aims and classification of Textile finishes
- Basic/ Routine finishes - Scouring, Bleaching, De-sizing, Singeing, Mercerisation, Tentering, Calendaring
- Functional finishes - Crease resistant, Flame retardant, Anti-microbial, Moth-proofing
- Common finishing defects

UNIT IV: Colour Fastness

6 Hours

This unit focusses on the concept of colour fastness and its importance in determining the durability and performance of dyed and printed textiles. It covers different types of colour fastness, factors affecting it, and standard testing methods used to evaluate wash and light fastness of fabrics.

- Concept and Importance of Colour Fastness
- Types of Colour Fastness
- Factors Affecting Colour Fastness
- Procedure and Testing of Colour Fastness – Wash Fastness, Light fastness

PRACTICAL (Credits 2; 60 Hours)

1. Preparation of Samples using Tie and dye technique
2. Samples of Block Printing – Block placement, multi-colour blocks
3. Screen printing
4. Batik technique
5. Preparatory Finishing: Desizing, Bleaching
6. Preparation of an article/garment using a combination of dyeing and printing techniques.

Essential Readings

UNIT I

This unit introduces the classification of dyes and their application on different textile fibres. It covers various dyeing methods and procedures used at different stages of textile production, along with the concept of colour fastness and its importance in ensuring fabric durability and quality.

- **Corbman, B. P.** (1985). *Textiles: Fiber to Fabric*. McGraw-Hill Book Company.
- **Jerstorp, K., & Kohlmark, E.** (2000). *The Fabric Design Book: Understanding and Creating Patterns Using Texture, Shape and Color*. A & C Black Publishers.
- **Joseph, M. L.** (1988). *Essentials of Textiles (5th ed.)*. Rinehart & Winston.

UNIT II

This unit focuses on the different styles and methods of textile printing used to create decorative surface designs. It also highlights emerging printing technologies and discusses common dyeing and printing defects that affect fabric quality.

- **Rastogi, D., & Chopra, S. (Eds.)**. (2017). *Textile Science*. Orient Black Swan.
- **Clarke, W.** (1977). *An introduction to textile printing*. Butterworth and Co. Ltd.
- **Kolanjikombil, M.** (2023). *Printing of textile substrates: Machineries and methods (Vol. 1)*. Woodhead Publishing.

UNIT III

This unit provides an understanding of routine and functional finishes applied to fabrics to enhance their appearance, performance, and durability. It also addresses common finishing defects and their impact on fabric quality.

- **Sekhri, S.** (2022). *Textbook of Fabric Science: Fundamentals to Finishing (4th ed.)*. PHI Learning Pvt. Ltd.
- **Rastogi, D., & Chopra, S. (Eds.)**. (2017). *Textile Science*. Orient Black Swan.

UNIT IV

This unit explains the concept and importance of colour fastness in textiles. It discusses various types of colour fastness, factors influencing it, and standard testing methods used to evaluate wash and light fastness of dyed and printed fabrics.

- **Booth, J. E.** (1996). *Principles of textile testing (3rd ed.)*. CBS.
- **Rastogi, D., & Chopra, S. (Eds.)**. (2017). *Textile Science*. Orient Black Swan.

Suggested Readings

- **Gulrajani, M. L. (Ed.)**. (2010). *Colour measurement: Principles, advances and industrial applications*. Woodhead Publishing.
- **Miles L.** (1994). *Textile Printing (2nd Edition)*. England: Society of Dyers and Colourists
- **Murphy V., Crill R.** (1991). *Tie-Dyed textiles of India*. London: Victoria & Albert Museum
- **Shorie G.P.** (2007). *Vastra Vigyan Ke Mool Siddhant*. Agra: Vinod Pustak Mandir.
- **Storey, J.** (1992). *Manual of Textile Printing*. London: Thames and Hudson publication

Note: Examination scheme and mode shall be as prescribed by the Examination branch, University of Delhi, from time to time