



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Textile Technology
Choice Based Credit System (CBCS) in Light of NEP-2020
Generic Elective for PG Courses
(2021-2023)

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
MTTX503	GE	COLOUR PHYSICS	60	20	20	-	-	3	0	0	3

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C – Credit.

*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

1. Impart knowledge about colour physics
2. En-light students about chemical constitutions of colours
3. Impart knowledge about colour strength and colour difference

Course Outcomes (COs):

- After completion of this course the students will be able to
2. Match the colours of given samples.
 3. Understand colour strength and colour difference
 4. Understand working principle of spectrophotometer

Syllabus:

Unit-I Color Science

10 HRS

Fundamentals of color science, what is colour, perception of color, color mixing laws confusion in color perception, meta-merism.

Unit-II Color order System

9 HRS

Munsell system, color atlas system, CIE system, CIE tri-stimulus values, and chromaticity co-ordinates, transform of the CIE system, Equation index for color spaces, whiteness assessment, yellowness index.

Unit-III Optical Theory for Color Matching

9 HRS

Optical theory for color matching: Reflectance curves of dyed specimens, Kubelka – Munk theory, application of K-M theory to textiles, Developments after K-M theory.

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Unit-IV Color Measuring Instruments

8 HRS

Color measuring instruments: Principles of color measuring instruments, optical sensors signal processor, features of the available color instruments, selection of instrument and its utilization.

Unit-V Color Difference, Pass/Fail System and Shade Sorting

9 HRS

Color difference, Pass/fail system and shade sorting: Color difference and chromaticity diagram, color difference equation, CIE color difference equations, Acceptability and perceptibility, modified color difference equations based on ABLAB. Pass/fail system, setting up tolerance limit.

Textbooks:

1. Instrumental Color Measurements & CA Color Matching for Textiles; H.S. Shah & S. Gandhi; Mahajan book distributors, Ahmedabad, 1990.
2. Color Physics for Industry – Roderick McDonald, Society of dyers and colourists, Bradford, England, 1987.
3. Principle of colour appearance and measurement, Asim K. Roy Choudhury, Woodhead publishing series in textiles, 2014.

References:

1. Colour for Textiles: A User's Handbook, W. Ingamells, Wilfred Ingamells, Hyperion Books publishers, 1993.
2. The theory of Coloration of Textiles; A. Johnson; Dyers Company Publications Trust, Bradford England, 2nd Edition, 1989.

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