AMPL11 COLOUR PHYSICS & COLOUR HARMONY

UNIT-1 INTRODUCTION

1.1 Geometric and chromatic attributes;
1.2 Radiation and illumination;
1.3 SPD, CT and CCT;
1.4 Sources and illuminants;
1.5 Need for artificial sources
1.6 Various ways of producing light and different artificial sources;
1.7 Lamp efficacy and colour rendering properties of sources.

UNIT-2 INTERACTION OF RADIATION WITH MATTER

2.1 Gloss and diffused reflectance,
2.2 Absorption of light in sample;
2.3 Various transitions in molecule,
2.4 Beer- Lambert law and its verification,
2.5 Deviation from Beer- Lambert law,
2.6 Additivity of absorbance, mixture analysis,
2.7 Absorbance and scattering in the sample- Kubelka- Munk theory.

UNIT-3 PERCEPTION OF COLOUR IN EYE \ BRAIN,

3.1 various colour theories

UNIT-4 ADDITIVE

4.1 Substractive mixing,
4.2 Colour specification systems
4.3 Munsell colour order system, CIE system,
4.4 Colour spaces, colour difference formulae.
4.5 Single constant Kubelka- Munk theory of colourant formulation and recepie prediction;
4.6 Modern computerized methods of colour matching;
4.7 Finding the dyeing recipes, shade sorting, etc.
4.8 Using the CCM software

UNIT-5 DECORATIVE EFFECT USING PATTERN AND DESIGN THEORY

2.1 Application of CAD for textiles.

Reference Books:

1. Colour: A Multidisciplinary Approach, Zollinger Heinrich Zurich, Verlag Helvetica Chemica Acta, 1999.
2. The color Science of Dyes and Pigments, R. McLaren Bristol, Adam Hilger Ltd., 1983
3. Industrial Color Technology, Johnson R.M., Sartzman M., American Chemical Society Washington D.C., 1971