

# **SYLLABUS OF TRAINING PROGRAMME ON DYEING**

## **Theory**

### **I. TEXTILE FIBRES:**

1. Physical and Chemical characteristics of fibre.
2. Classifications of Textile Fibres according to their nature and origin.
3. Chemicals constitutions/ Compositions of different Natural Fibres like: Cotton, Jute, Silk, Wool etc. their chemical structure, properties and uses.
4. Introduction to man made fibres like Viscose Rayons, Acrylic, properties and uses of Textile fibres.

### **II. TEXTILE CHEMISTRY:**

1. Identification of Textile Fibres.
2. Estimation of strength of bleaching powder and hydrogen per oxide.
3. Determination of pH by universal indication, pH meter etc.
4. Desizing, Scouring and Bleaching, souring etc. of cotton materials.
5. Degumming and bleaching of silk,
6. Scouring and bleaching of wool

### **III. DYEING:**

1. Dyeing of Wool, silk with commonly used of dye classes such as Acid, Metal Complex, & Basic Dyes etc. including chrome dyes for wool.
2. Dyeing of nylon with acid, metal complex and reactive dyes, Dyeing of acrylic and Art. Silk (viscose rayon).

### **IV. CARPET WASHING:**

1. Traditional method of Carpet Washing. Antique Wash. Herbal Wash.

### **V. TESTING:**

#### **Importance of testing**

1. Various fastness properties of dyed materials like Light, Washing, Rubbing and Perspiration.

### **VI. POLLUTION CONTROL IN TEXTILE & CARPET INDUSTRY:**

1. Possible factors polluting the atmosphere in the premises as well as general atmosphere, such as smoke, steam, dust, solid particle, chemical fumes, noise etc.
2. Possible hazards to life: - Equipment/ machinery in the premises and the other property in the open space precautions to be taken to minimize the pollution.
3. Methods of measuring and controlling the pollution. Methods to analyze the level of pollution. Use of Acids, Alkalis, Dyes, Salts, Solvents, Emulsions and Hazardous Chemicals and Polymers in the textiles and carpet processing industry. Pollution due to drainage of these substances.
4. Bio-degradability of various effluents and its effect on the environments. Ecology balance and effluents. Methods of recovery of various ingredients of effluents. Methods of reusing the products of effluents. Methods of analyses of effluents, tolerance level of the pollution due to effluents.
5. Advantages of pollution control to the Textile and Carpet Industry.

## **Practical**

### **I. TEXTILE FIBRES:**

1. Physical and Chemical characteristics of fibre.
2. Classification of textile fibres according to their nature and origin.
3. Chemical constitution / composition of different natural fibres like Cotton, Jute, Silk, Wool etc. their chemical structure, properties and uses.
4. Blend analysis of synthetic fibres

### **II. TEXTILE CHEMISTRY:**

1. Identification of Textile Fibres.
2. Estimation of strength of bleaching powder and hydrogen peroxide.
3. Determination of pH by universal indication, pH meter etc.
4. Desizing, Scouring and Bleaching, Souring etc. of cotton materials.
5. Degumming and bleaching of silk,
6. Scouring and bleaching of wool

### **III. DYEING:**

1. Dyeing of wool silk with commonly used dye classes such as Acid, Metal complex, and Basic dyes etc. including chrome dyes of wool.
2. Dyeing of nylon with acid, metal complex and reactive dyes, Dyeing of acrylic and Art. Silk (viscose rayon).
3. Shade matching of Wool with Acid dyes.
4. Shade matching of Wool with Metal Complex dyes.
5. Shade matching of Silk with Acid dyes.
6. Shade matching of Silk with Metal Complex dyes.
7. Dyeing of Cotton and Viscose with Reactive and Vat dyes

### **IV. CARPET WASHING:**

1. Traditional method of Carpet Washing. Antique Wash. HerbalWash.

### **V. TESTING:**

#### **Importance of Testing**

1. Various fastness properties of dyed materials like light, washing, rubbing and perspiration.