

**Daffodil International University**

**Department of Textile Engineering, Faculty of Engineering (FE)**

**Course Title: Textile Chemistry, Semester: Spring 2020, Course Code: TE 215,**

**Course Teacher: Dr. Farzana Rahman, Contact: 01788536909**

**Course Objectives:**

* *Definition and classification of dyes, mechanism of dyeing.*
* *Properties of textile scouring and finishing chemicals.*
* *Composition and properties of oil, fats and waxe*
* *Formulation and mechanism of action of detergents.*
* *Water purification techniques.*
1. **Dyes and pigments:** Nomenclature, structures, raw materials for synthesis of dyes and pigments, dye intermediates.
2. **Water and its purification:** Classification of natural waters and the impurities, water hardness and its classification, Estimation and softening of water hardness (Lime soda and Base Exchange methods of softening), sequestering agents, problems associated by using hard water in the textile industries, Standard of dye house and boiler water. Water consumptions in different types of textile industries, Green chemistry (Effluents treatments and purification).
3. **Textile Finishing Chemicals:** N-methyl compound, silicone, acrylic and allied polymers, miscellaneous compounds.
4. **Oil, Fats and Waxes**: General discussion, characteristic and composition of various important oils, edible and inedible oil and their application, hydrogenation of oils, waxes (bee’s waxes, carnauba wax, spermaceti wax, mineral waxes)
5. **Soaps and Detergent**: Soap and soap manufacturing, theory of detergency, synthetic detergent (non-degradable and biodegradable detergents), laundry detergent formulation, fabric softeners/ cationic surfactants.
6. **Coloration Chemicals:** Chemistry, properties, application of different acids, alkalis, salts, oxidizing and reducing agents, and miscellaneous agents in coloration of textiles.

**Guidelines:**

* **Upto midterm two quizes and one assignment will be taken.**
* **After midterm one quiz and one presentation will be taken& there will be no retake for quizzes.**

**Recommended Books:**

1. **Textile Chemistry- J.T. Marsh**
2. **Textile Science- Gohl and Vilensky**
3. **Dyeing and Chemical technology of Textile Fibres- E.R. Trotman**
4. **Chemical Process Industries- N. Shreves**
5. **Industrial Chemistry- B.K. Sharma.**

**Class Schedule:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Day** | **8:30-10** | **10-11:30** | **11:30-1** | **1-2:30** | **2:30-4** | **4-5:30** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |