CLUSTER UNIVERSITY SRINAGAR

SYLLABUS (FYUP UNDER NEP 2020)

Offered By Department Of CHEMISTRY

Semester 1st Skill Enhancement Course (SEC)

Course Title: Engineering Materials-I

Course Code: UGCHM22S104 **Max. Marks 100**
Credits: 4 (Theory: 1, Practical: 3) **Theory External: 15; Min Marks: 06**
Contact Hrs: 105 (Theory: 15, Practical: 90) **Theory Internal (Continuous Assessment): 10 Marks, Min Marks: 04**
Practical Experimental Basis= 45 Marks, Min. Marks: 18
Practical Internal (Continuous Assessment): 30 Marks, Min. Marks: 12

Objectives:

1. To educate students about basic chemistry, structure and composition of commonly used engineering materials
2. To familiarize students with various career opportunities in the manufacture and processing of these materials.

Learning outcomes:

On completion of the course, students should

- Be having knowledge of composition and structure of common engineering materials.
- Know about various industrial processes involved in the manufacture and handling of these materials.
- Be able to pursue their career in this field.

THEORY

Unit-1: CEMENTING MATERIALS

Cement and its composition, Types of Cement, Setting of Cement, lime and its properties, classification of lime, Uses of lime, Comparison of Cement and lime, Gypsum, Plaster of Paris (POP), composition , Uses

PRACTICALS

Unit-2: Lab Course-I

1. To determine the specific gravity of a given sample of cement.
2. To determine the fineness of cement.
3. Determination of setting time of cement.

Unit-3: Lab Course-II

1. Preparation of Plaster of Paris
2. Determination of setting time of POP
3. Slaking of Lime
4. Visit to POP manufacturing plant

Unit-4: Field Work

1. Short project based on industrial visit to a cement factory.
2. Comparative account of different brands of cement in terms of setting time, fineness and strength.
3. Project report/Assignment.

Books Recommended

1. Industrial Chemistry-I by B.K. Sharma
2. Engineering chemistry by Jain & Jain
3. Engineering Chemistry by Wiley Editorial, 2nd Edition, 2013