

**SYLLABUS FOR LAB ASSISTANT**  
**(CERAMICS ENGINEERING)**

12

12/6  
695

## Syllabus for Lab Assistant in Ceramics Engineering

### 1. Refractory Technology

Introduction of Refractories, Basic Properties of Refractories for materials, Role Of Refractories in different industries, Classification of refractories, Refractories raw materials: Silica, Fireclay, Alumina, Alumino-Silicate, Magnesite, Bauxite, Chromite, Zirconia, Graphite; Processing of Raw Materials: Jaw Crusher, Cone Crusher, Ball Mill, Tube mill, Magnetic Separator, Screens, Pug Mill, Press, Mixer; Dryers and Kilns; Properties and Testing of Refractory- Apparent Porosity, Bulk Density, Specific Gravity, Shrinkage, Cold Crushing Strength, Modulus of Rupture, Thermal Expansion, Thermal Conductivity, Creep, Abrasion Resistance, Corrosion Resistance, PCE, RUL, TSR, PLCR; Monolithic Refractory

### 2. Glass Technology

Introduction of Glass, Chemical Composition of Glass, Classification of Glass: Soda Lime Glass, Potash Lime Glass, Potash Lead Glass, Borosilicate Glass, Safety Glass, Sandwich Glass, Phosphate Glass, Glass Ceramic, Fibre Glass, Glass Wool, Optical Fiber; Glass Making Raw materials, Machineries for Glass Making, Batch Calculation, Tank Furnace, Pot Furnace, Induction Furnace, Annealing, Sieve Analysis, Glass Properties, Glass Decoration: Etching, Sand Blasting, Silvering; Defects in glass: Blister, Seeds, Stones, Cords

### 3. Cement Technology

Introduction of Cement, Classification of Lime, Classification of Cement: Portland Cement, Pozzolona Cement, Portland Slag Cement, Fly ash Cement, Quick Setting Cement, Sulphate Resistant Cement, Alumina Cement, White Cement; Manufacturing of Cement, Cement Making Raw Materials, Hydration of Cement, Properties and Testing of Cement, Fineness of Cement, Initial Setting time and Final Setting Time of Cement, Vicat apparatus, Compressive Strength of cement

### 4. Pottery and Porcelain Technology

Introduction of Pottery, Raw Materials for Pottery Making: Clay, Quartz, Feldspar, Nepheline Synite, Talc, Pyrophyllite, Wollastonite, Sillimanite, Bone Ash, Plaster of Paris, Gypsum; Classification: Earthenware, Teracotta, Stoneware, Porcelainware, Bone China; Forming and Shaping: Batch Calculation, Composition, Slip preparation, Slip casting, Plastic forming process, Jiggering and Jollying, Extrusion, Dry Pressing, Hot Pressing; Glaze, Classification of Glaze, Application of Glaze, Decoration Process, Drying and Firing of Body, Defects and Remedies