

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA IN CERAMIC TECHNOLOGY
SEMESTER: V

Subject Name: **Quality Control**

Sr. No.	Course Content
1.	Introduction: 1.1 Introduction of quality control and quality assurance. 1.2 Theory of sampling for testing specimen.
2.	Raw Materials Testing: 2.1 Chemical analysis 2.2 Rationale analysis 2.3 Determination of soluble salts and effect of soluble salts on ceramic manufacture 2.4 Method of sieve analysis and determination of particle size Distribution and control of fineness. 2.5 Method of determining flow test of feldspar.
3.	Properties: 3.1 Method of determining water of plasticity, green modulus of rupture of clays. 3.2 Study of plasticity, slip fluidity, rate of casting, litre weight, moisture, content and control of density and viscosity of bodies and glazes.
4.	Quality Control of Green Articles: 4.1 Method of controlling green strength, detection of crack dimension, shrinkage during drying and firing.
5.	Testing of Finished Products: 5.1 Method of determination of modulus of rupture, compressive strength, impact strength, abrasion resistance, Thermal Shock resistance etc. 5.2 Method of controlling gloss and appearance of glaze articles 5.3 Detail study for controlling porosity, water absorption, Bulk density of refractory products. 5.4 Detail study of crazing resistance, lead solubility and acid Alkali resistance of ceramic products.

6.	Testing of Insulators: 6.1 Study of electro mechanical strength, flash over test, dry and wet, dielectric constant, powerless factor, Crazing test 6.2 Various requisites of finished products used for specific purpose 6.3 Scope of computer application for quality control of ceramic Products.
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Laboratory Experiments:

1. Determination of particle size distribution by sieve analysis of ceramic raw materials
2. Determination of moisture content of ceramic raw materials
3. To determine the density of ceramic products and measurement of] Viscosity of slip.
4. Detection of cracks and determination of green strength of article
5. Study of crazing defect of glazed ceramic articles
6. Determination of modulus of rupture of ceramic products
7. Determination of water absorption of ceramic wares
8. Statistical quality control techniques
9. Detail study of specifications of different ceramic products.

Reference Books:

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| 1. Fine ceramics | F.H.Norton |
| 2. Industrial ceramics | Singer & Singer |
| 3. Refractory | F.H.Norton |
| 4. Chemistry and physics of clay and allied ceramic products | Grimshaw |
| 5. Ceramic Tests and calculation | A.I.Andrews |