

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA IN CERAMIC TECHNOLOGY
SEMESTER: V

Subject Name: **Structural Clay Products**

Sr. No.	Course Content
1.	Introduction: 1.1 Introduction to structural clay products.
2.	Terracotta: 2.1 Various types of terracotta. 2.2 Details of building bricks, roofing tiles & hollow bricks. 2.3 Details of raw materials used for body preparation. 2.4 Method of aging, pugging and souring. 2.5 Various methods of shaping. 2.6 Drying and firing process of terracotta. 2.7 General properties, shape, colour, strength, resistance to weathering and colour on firing. 2.8 Specification and tests of terracotta products.
3.	Method of Manufacture of Terra Cotta Products: 3.1 Method of manufacture of common building bricks, face bricks, blue bricks, paving bricks, sand lime bricks. 3.2 Manufacture of tiles such as roofing tiles, drain tiles, hollow tiles, etc. 3.3 Methods of drying of products and firing techniques. 3.4 Details of kilns used for firing these products.
4.	Sanitary Wares: 4.1 Types of sanitary wares, earthen wares and stoneware sanitary wares. 4.2 Details of fire clay sanitary wares and vitreous sanitary wares. 4.3 Raw materials used for manufacture of fire clay sanitary wares, Earthenware and vitreous sanitary wares. 4.4 Details of body preparation, shaping process, drying and glazing. 4.5 Details of firing of sanitary wares, kilns used, method of loading of sanitary wares. 4.6 Flow sheet of manufacturing process of sanitary wares.

5.	Defects and Remedies: 5.1 Details of various defects occurred in various types of traditional ceramics such as Pinholes, bubbles, cracks, bloating, crawling, rolling of glaze, spitouts, crazing and dunting etc. 5.2 Details of remedies of various defects occurring in various types of traditional ceramics.
6.	Wall Tiles and Floor Tiles: 6.1 Introduction 6.2 Manufacture process of wall tiles and floor tiles 6.3 Raw materials used for wall tiles and floor tiles 6.4 Method of body preparation for wall tiles and floor tiles 6.5 Methods of shaping of wall tiles and floor tiles 6.6 Method of drying, glaze application and firing 6.7 Details flow sheet of the process of wall tiles and floor tiles
7.	Flow Sheet of the Manufacturing Process of Structural Clay Products: 7.1 Flow sheet of the various processes of structural clay products. 7.2 Details specifications of various structural clay products. 7.3 Details of various precautions required for pollution control and safety. 7.4 Scope of computer application during manufacture process of structural clay products.

Laboratory Experiments:

1. Visit to Roofing tiles Industry.
2. Visit to cement mosaic tiles Industry.
3. Visit to Red bricks Industry.
4. Visit to sanitary wares ceramic Industry.
5. Visit to glaze tiles cement Industry.
6. Visit to stone ware pipe Industry.
7. Visit & study of D.D.kiln, shuttle kiln, tunnel kiln & Chamber kiln.

Reference Books:

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| 1. Modern ceramic practice | A.J.Dale |
| 2. Fine ceramics | F.H.Norton |
| 3. Heavy clay Technology | F.W.Clews |
| 4. Ceramics Vol. I,II,III | G.Mcnamara |
| 5. Ceramic glazes | C.W.Parmelee |
| 6. Ceramic | Kenneth Shaw |
| 7. Introduction to ceramics | W.D.Kingery |
| 8. Ceramic Fabrication process | W.D.Kingery |