

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA IN CERAMIC TECHNOLOGY
SEMESTER: V

Subject Name: Applied Ceramics

Sr. No.	Course Content
1.	Introduction: 1.1 Introduction of various ceramic products. 1.2 Classification of ceramic products, their properties and use. 1.3 Scope of ceramic products in India and abroad.
2.	Ceramics in Construction: 2.1 Various types of ceramic products used in construction. 2.2 Details regarding floor tiles, glazed walls tiles, sanitarywares, brick and roofing tiles.
3.	Salt Glazed Pipes: 3.1 Introduction 3.2 Requirement for these items, properties of finished products. 3.3 Methods of manufacture of salt glazed pipes. 3.4 Batch composition, body making and glaze application on these items.
4.	Ceramic Products in Home: 4.1 Details of various items covered under this head. 4.2 Detailed study of table ware, kitchen ware, stone wares, flame resistant wares, art wares and containers . 4.3 Details regarding requirements for these items. 4.4 Methods of manufacture of these items. 4.5 Method of preparing batch composition for bodies and glazes for these items. 4.6 Methods of firing these wares in Kilns. 4.7 Study of various defects occurring after firing and remedies for removal of defects.
5.	Electrical Application of White Ware Products: 5.1 Details of items covered in this group. 5.2 Details of low tension electrical insulators. 5.3 Details of high tension and high voltage electrical insulation. 5.4 Details of low loss ceramic bodies.

	5.5 Details of various raw materials used in the manufacture of these items. 5.6 Preparation and characteristics desired in the finished products. 5.7 Methods of manufacture of these items in brief.
6.	INDUSTRIAL USE OF CERAMICS PRODUCTS. 6.1 Details of various items covered in this head. 6.2 Details of abrasion resistant bodies. 6.3 Details of chemical resistant and heat resistant bodies. 6.4 Methods of compounding of bodies and manufacture process. 6.5 Properties and uses of these products in different industries. 6.6 Industrial applications of white ware bodies in chemical industries as a laboratory chemical wares, electrical porcelain, low tension electrical porcelain insulator, high tension electrical insulator. 6.7 Porcelain parts used in electronic equipment. 6.8 High temperature materials such as thermocouple tubes, saggars, muffles and kiln cars and other kiln furniture. 6.9 Ceramic use in metallurgical industries specially refractories used in Various kiln, furnaces, recuperative tubes and other heating chambers. 6.10 Other novel applications of ceramic products.
7.	CERAMIC PARTS USED IN ROCKET AND AVIATION. 7.1 Introduction. 7.2 Types of products and their properties with specific use. 7.3 Applications of ceramic materials in Cryogenic, Aerounatics and Space engineering.
8.	VITREOUS ENAMELS. 8.1 Introduction. 8.2 Details of hospital utensils, domestic utensils, reflectors and sign board. 8.3 Characteristics of enamel products.
9.	GLASS. 9.1 Introduction. 9.2 Glass articles used in construction. 9.3 Details of glass pans, sheets, wired glass and figured glass. 9.4 Details of glass bottles used as packing items in various industries. 9.5 Details of optical glass used in various optical and telescopic instruments. 9.6 Details of glass articles used daily life in domestic use.
10.	10.0 ABRASIVES. 10.1 Introductions. 10.2 Details of various raw materials used as abrasive. 10.3 Properties of the raw materials. 10.4 Sources and preparation of abrasive grains and abrasive products. 10.5 Methods of grinding and polishing operation. 10.6 Properties and uses of abrasives.

LABORATORY EXPERIMENTS:

1. Study applications of ceramic products in construction.
2. To study the application of various ceramic product which used in home.
3. Visit to a refractory industry & report preparation.
4. Visit to a ceramic glaze tiles factory & report preparation.
5. Visit to a stoneware jar factory & report preparation.
6. Visit to a cement mosaic factory & report preparation.
7. Visit to a ceramic sanitary ware factory & report preparation

Reference Books:

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| 1. | A hand book of modern pottery manufacture | H.N.Bose |
| 2. | Industrial ceramic | Singer & Singer |
| 3. | Ceramic whitewares | Sudhir sen |
| 4. | Fine ceramics | F.H.Norton |
| 5. | Refractory | F.H.Norton |
| 6. | Modern glass practice | S.R.Scholes |