

GUJARAT TECHNOLOGICAL UNIVERSITY
Diploma in Ceramic Technology
Semester: 4

Subject Name: GLASS – I I

Sr. No.	Course Content
1.	INTRODUCTION 1.1 Types of Glass and their chemical composition. 1.2 Details regarding use and their property of glass. 1.3 Scope of glass industry in India and abroad.
2.	RAW MATERIALS 2.1 Details regarding various raw materials used for glass making. 2.2 Properties and functions of various oxides used in glass. 2.3 Effect of oxide during melting of glass and properties of glass.
3.	MANUFACTURING PROCESS OF GLASS ARTICLES 3.1 Manufacturing of glass by drawing process. 3.2 Manufacturing process of plate glass and sheet glass. 3.3 Manufacturing process of glass cylinders. 3.4 Manufacturing process of scientific glass apparatus by blowing on lamps. 3.5 Manufacturing process of container glass.
4.	MANUFACTURING PROCESS OF OPTICAL GLASS : 4.1 Details characteristics of optical glass. 4.2 Raw materials used for making of optical glass. 4.3 Details of melting of optical glass. 4.4 Details of furnaces used for melting Optical Glass. 4.5 Precautions required during melting and manufacturing of optical glass. 4.6 Quality control techniques.
5.	PROPERTIES OF GLASS 5.1 Details of physical properties and mechanical properties of glass. 5.2 Details of electrical properties of glass. 5.3 Details of thermal and optical properties of glass. 5.4 Determination of various tests of glass.
6.	DECORATION AND AFTER TREATMENT OF GLASSWARES 6.1 Method of decoration of glass wares. 6.2 Method of sand blasting and its suitability. 6.3 Process of etching on glass with their uses and suitability. 6.4 Method of silvering and enamel decoration glass
7.	DEFECTS IN GLASS 7.1 Details of various defects occur in glass. 7.2 Reasons of occurring defects such as stones, cords, blisters and seeds and

	their remedies.
8.	POLLUTION CONTROL AND SAFETY 8.1 Various reasons of pollution in glass industries. 8.2 Precautions required during melting and manufacturing process of glass articles.

LABORATORY EXPERIMENTS:

1.	To prepare a glass batch of the given chemical composition
2.	To prepare potash lead glass batch.
3.	To prepare a yellow colour glass batch.
4.	To prepare a borosilicate glass batch.
5.	To prepare an amber colour glass batch.
6.	To prepare an opal glass batch.
7.	To study decoration on glass wares
8.	To prepare a crystal glass batch.
9.	To study melting process of glass batch in furnace.
10	Visit of glass industry.

Reference Books:

1. A hand book of glass Manufacture R.Charan
2. Modern glass practice S.R.Scholes
3. A hand book of glass engineering E.B.Shand
4. Elements of ceramics F.H.Norton
5. Glass manufactures Vol. I & Vol. II F.V.Tooley
6. History of glass making W.Douglass