GUJARAT TECHNOLOGICAL UNIVERSITY

CHEMICAL TECHNOLOGY (36)

INTRODUCTION TO GLASS & CERAMIC TECHNOLOGY-I

SUBJECT CODE: 2133603

B.E. 3RD SEMESTER

Type of Course: Chemical Technology

Prerequisite: Knowledge of chemistry is required

Rationale: The students should have a clear concept on basic chemistry, geology and Mineralogy that will help them to have an easy grasp of the subject.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks						Total Marks
				Theory Marks			Practical Marks			
L	T	P	C	ESE (E)	PA (M)		PA (V)		PA (I)	
					PA	ALA	ESE	OEP		
4	0	0	4	70	20	10	20	10	20	150

Content:

Sr. No.	Topics	Teaching Hrs.	Module Weightage
1.	**Chemistry of raw materials used in ceramics industry:** Glass, Refractory, Castables, White wares, Tiles, Potteries, Ceramic coatings, Glaze, Cement concrete. Global & Indian size of Industry.	20	40
2.	**General & Physical geology**: Preliminary concepts of geology, petrology of coal & its use.	12	25
3	**Mineralogy:** classification & composition of minerals, physical & optical properties ofminerals.	12	25

Reference Books:

1. Elements of ceramics ,Norton F.H, Longman higher education, 2nd Ed, 2001
2. Introduction to ceramics, Barsoum, Institute Of Physics Publishing (gb) 2002
3. Introduction to Ceramics,Kingery W.D,. Wiley New York :, 2nd Ed, 1976
4. Material Science,Smith, Mcgraw Hill Higher Education, 4th Ed,2005
5. Industrial ceramics,Singer & Singer, Oxford &Ibh (From Technip), 1st Ed.,2008
6. Textbook of physical Geology, Mukherjee, , CBS Publishers & Distributors-New Delhi 1stEd.,2011
7. Textbook of Mineralogy, Tyrrel,W, , CBS Publishers & Distributors, 4th Ed.,2006
8. Textbook of Geology, J B Mahapatra, CBS Publishers & Distributors, 2nd Ed. ,2008

Course Outcomes:

At the end of this course students will be able to:

1. To express their technical knowledge over fundamentals of the subject
2. To choose batch composition for different glasses and ceramic products.

3. To be able to utilize their knowledge and skills for the preparation of other related future subjects in the Glass & Ceramic Technology course curriculum
4. To be able to apply this knowledge in their higher study, researchwork with related technical subjects.
5. To build a bridge between theoretical and practical concept used in industry.

List of Open Source Software/learning website:

1. Website of Indian Ceramic society
2. Website of Indian Institute of Ceramics
3. Delnet

ACTIVE LEARNING ASSIGNMENTS: Preparation of power-point slides, which include videos, animations, pictures, graphics for better understanding theory and practical work – The faculty will allocate chapters/ parts of chapters to groups of students so that the entire syllabus to be covered. The power-point slides should be put up on the web-site of the College/ Institute, along with the names of the students of the group, the name of the faculty, Department and College on the first slide. The best three works should submit to GTU.