UTKALMANI GOPABANDHU INSTITUTE OF ENGINEERING, ROURKELA

LESSON PLAN

SESSION: 2023-2024

DEPARTMENT OF CERAMIC TECHNOLOGY

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SUBJECT CODE: TH-2

NAME OF THE SUBJECT: GLASS TECHNOLOGY

BRANCH: CERAMIC TECHNOLOGY

SEMESTER: DIPLOMA 5TH SEM

NUMBER OF CLASS ALLOTED PER WEEK: 4(01-08-23 TO 30-11-23)

TOTAL PERIODS ALLOTED TO THE SUBJECT ACCORDING TO STEVT:60

NAME OF THE FACULTY: KRUSHNA PRASAD DASH

Week/Date	Lecture	Topic to be covered	Remarks
1st week	1st	**Chapter-1:Raw material and batch composition** 1.1: Define glass and glassy state.	
	2nd	1.2: Historical background of glass.	
	3rd	1.3: Glass industries in india and the present status.	
2nd week	1st	1.4: Describe the major ingredients for glass making.	
	2nd	1.5: describe the minor ingredients used for glaa making.	
	3rd	1.6: Define cullet and its use in glass making.	
	4th	1.7: Describe selection of glass making.	

3rd week	1st	1.8: Properties of glass sand for glass making.	
	2nd	1.9: Impurities in glass raw materials and their influence in glass making.	
	3rd	**2.0: Glass melting process: Explain the following in brief**. 2.1: Calculation of batch of raw materials for making glass.	
	4th	2.2: Process of glass formation.	
4th week	1st	2.3: Refining of glass.	
	2nd	2.4: Decolorization of glass.	
	3rd	2.5: Role of viscosity in glass melting.	
	4th	2.6: Glass melting furnace.	
5th week	1st	2.7: Glass tank furnace and glass pot furnace.	
	2nd	2.8: De-vitrification of glass.	
	3rd	**3.0: MANUFACTURING & FORMATION OF GLASSWARE.** 3.1: Various methods used for making glass products.	
	4th	3.2: Manufacture of glass by blowing process.	
6th week	1st	3.3: Float process.	
	2nd	3.4: Various moulds for glass making.	
	3rd	3.5: Manufacturing of glass bottle, sheet glass, thermo flask, electric bulb.	
	4th	3.6: Manufacturing of fiber glass, glass wool.	
7th week	1st	3.7: Layout of modern glass plant.	
	2nd	**4.0: ANNEALING & TOUGHENING OF GLASS.** 4.1: Define annealing & toughening of glass & Aim of annealing.	

	3rd	4.2: Describe the process of annealing in details.	
	4th	4.3: Explain tempering of glass by various methods.	
8th week	1st	4.4: State and explain chemical and mechanical toughening of glass.	
	2nd	**5.0: Properties of glass.** 5.1:Describe the following properties of glass in details. 01.Viscosity.	
	3rd	02: Thermal expansion.	
	4th	03: Density.	
9th week	1st	04: Optical properties.	
	2nd	05: Chemical durability.	
	3rd	**6.0: TESTING OF GLASS.(Describe in brief)** 6.1: Testing of defect of glass by visual observation.	
	4th	6.2: Blistering, cords, stones in glass.	
10th week	1st	6.3: Determination and observation of strain in glass.	
	2nd	6.4: Measurement of thermal shock resistance of glass.	
	3rd	6.5: Testing of viscosity of glass.	
11th week	1st	6.6: Testing of density of glass.	
	2nd	6.7: Testing of strength of glass.	
	3rd	6.8: Durability of glass.	
	4th	**7.0: GLASS DECORATION.** 7.1: Describe the following methods of glass decoration in brief. A: Polishing.	
12th week	1st	B: Grinding. C: Etching.	
	2nd	D: Sand blasting.	

	3rd	E: Engraving.	
	4th	F: Cutting.	
13 th week	1st	G: Staining.	
	2nd	H: Enameling.	
	3rd	**8.0: SPECIAL GLASSES.** 8.1: Define special glass.	
14 th week	1st	**8.2: Describe the characteristics and application of the following glasses** A: Borosilicate glass.	
	2nd	B: Pyrex glass.	
	3rd	C: Heat resisting glass.	
15 th week	1st	D: Coloured glass.	
	2nd	E: Ruby glass.	
	3rd	F: Laminated glass.	