

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. SEMESTER: VII

MINING ENGINEERING

Subject Name: **Mineral Processing**

Subject Code: **172204**

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	University Exam (E)		Mid Sem Exam (Theory) (M)	Practical (Internal)
				Theory	Practical		
3	0	2	5	70	30	30	20

Sr. No	Course Content	Total Hrs.
1.	Communion and Liberation: Theory and practice of crushing and grinding	6
2.	Sizing and Classification: Laws of setting of solids in fluid; laboratory methods of sizing and interpretation of sizing data, Industrial sizing by screens. Types of classifiers, Classification as means of sizing/concentration	6
3.	Gravity Concentration Methods: Jigging, flowing, Film concentration like spirals and shaking table, Heavy Media Separation Theory, application and limitations of each method. Introductory Froth Flotation, Physico-Chemical principles underlying flotation-reagents, flotation of sulphide, oxide and non-metallic ores	6
4.	Electrical Methods of Concentration: Electrostatic and Magnetic methods	6
5.	Dewatering and Drying: Thickening, filtration and drying coal washing, coal washability, crushing, sizing and cleaning of coal	6
6.	Sampling: Importance and methods used in Ore-Dressing	6
7.	Simplified Flow Sheets: Beneficiation of coal and simple ores of copper, lead, zinc, Iron and manganese with reference to Indian deposits	6

Text Books/ Reference Books:

1. Principles of Mineral dressing – A.M. Gaudin
2. Mine Economics – Arvind Kumar
3. Mineral Processing Technology – Barry A. Wills