GUJARAT TECHNOLOGICAL UNIVERSITY

MINING ENGINEERING
MINE AND MINERAL ECONOMICS
SUBJECT CODE: 2182201
B.E. 8th SEMESTER

Type of course: Undergraduate Level

Prerequisite: Zeal to learn Subject

Rationale: After learning the course the students should be able to know the importance of mineral and economic value of mining and mineral deposit and mining industries and also students should be able to learn Evaluation, Sampling, Valuation and mining cost and loss of mineral in mines.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks						Total Marks
L	T	P	C	Theory Marks			Practical Marks			
				ESE (E)	PA (M)		ESE (V)		PA (I)	
					PA	ALA	ESE	OEP		
3	0	0	3	70	20	10	0	0	0	100

Content:

Sr. No.	Content	Total Hrs	% Weightage
1	**Introduction:** Economic importance of the mineral industry; mining economy, risky nature of the mining industry, State and the mining industry; national mineral policy. Royalty, taxes and duties; imports and exports.	**6**	**12**
2	**Evaluation of Mineral Deposits:** Mineral resource concept, classification and estimation. Conservation of mineral resource scope and limitations. Standard controlling factors, calculation of tonnage factors and mineable ore limitations, Ore classification.	**7**	**15**
3	**Loss of mineral in mining:** Classification and incorporation of losses; coefficient of completeness of mineral extraction; dilution and recovery.	**8**	**16**
4	**Cost of mining:** Capital and operating costs; factors affecting operating cost; methods of estimating future costs; standard cost and forecast; budget and budgetary control.	**8**	**16**
5	**Mine Sampling:** Theory of sampling, method of sampling employed in different cases, precaution to be taken; Reduction, Calculation of overage reef values and widths; average stopping values and width and average milling values and widths; estimation of average-tonnages and value in mine-percentage sorted, percentage recovered, sampling procedure and precaution of sampling alluvial deposits and dumps, estimation of reserves.	**12**	**26**
6	**Mine Valuation:** Different methods and their application; depreciation and amortisation and redemption of capital; Life of mine; its present value, Reports on valuation.	**7**	**15**

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
64%	**18%**	**12%**	**2%**	**2%**	**2%**

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Books:

1. Mine Economics, By Arvind Kumar

Course Outcome: After learning the course the students should be able to know the importance of mineral and economic value of mining and mineral deposit and mining industries and also students should be able to learn Evaluation, Sampling, Valuation and mining cost and loss of mineral in mines.

List of Open Source Software/learning website:

1. Wikipedia.com

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.