



GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering
Subject Code: 3162212
Semester – VI
Subject Name: Waste Management

Type of course: Open Elective

Prerequisite: Before studying this subject students need to know all the underground and surface mining activities.

Rationale: The course is designed to help the student in understanding mine wastes can generate from its various stages like from development to production. Moreover, during processing of mine ore most of the wastes are generated. Now, effective management of these wastes is vital and utilizes it very efficiently. They can identify its detrimental effects and impacts on surroundings and have to take suitable preventive measures.

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE (E)	PA (M)	ESE (V)	PA (I)		
3	0	0	3	70	30	0	0	100

Content:

Sr. No.	Content	Total Hrs
1	Chemical aspects of environmental pollution by mine wastes and their impacts.	9
2	Production and characterization of solid wastes in different types of mines.	9
3	Generation and characterization of mine effluents and leachate.	9
4	Tailings- characterization, technical issues, sampling and analysis, site selection and design of tailings impoundment, tailing dam failure.	9
5	Management of different types of mine wastes.	9

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
15%	25%	30%	20%	10%	0%



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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:

Sr. No.	Author	Title of Books	Publication
1.	Winnie Wing Mui So	Environmental Sustainability and Education for Waste Management	Springer
2.	Di Wu	Mine Waste Management in China: Recent Development	Springer
3.	Ramesha Chandrappa Diganta Bhusan Das	Solid Waste Management: Principles and Practice	Springer
4.	Trevor M. Letcher	WASTE: A handbook for Management	Elsevier, Academic Press
5.	Jacqueline Vaughn	Waste Management	ABC-CLIO

Course Outcomes:

After studying this course students will be able to...

Sr. No.	CO statement	Marks % weightage
CO-1	List different types of mine wastes.	20
CO-2	Analyse mine waste based on its chemical and physical aspects.	40
CO-3	Manage mine waste to reduce pollution .	40