



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Bachelor of Engineering

Level: UG

Branch: Mining Engineering

Subject Code: BE05022061

Subject Name: Mine Legislation - II

w. e. f. Academic Year:	2024-25
Semester:	5
Category of the Course:	Professional Elective Course - 2

Prerequisite:	Mine Legislation – I
Rationale:	The course provides detailed knowledge of advanced mining legislations, statutory provisions, safety regulations, environmental laws, labor welfare measures, and mine administration practices applicable to the Indian mining industries. It enables students to understand legal responsibilities, regulatory compliance, mine safety standards, and sustainable mining governance essential for efficient and lawful mining operations.

Course Outcomes:

Sr. No.	CO statement	Marks% weightage
CO-1	Understand advanced provisions of mine safety legislation and DGMS regulations.	15
CO-2	Learn the statutory responsibilities and duties of mine officials under mining laws.	20
CO-3	Understand environmental, labour welfare and occupational health legislation applicable to mines.	25
CO-4	Analyze legal procedures related to accidents, inquiry, compensation, and mine closure.	20
CO-5	Understand recent amendments, sustainable mining governance, and compliance systems in the mining industry.	25

Teaching and Examination Scheme:

Teaching / Learning Scheme (in Hours per semester)					Total Credits	Assessment Pattern and Marks					Total Marks
L	T	P	PB L	Total no of hours per semester		Theory		Tutorial / Practical			
						ESE (E)	PA / CA (M)	PA/ CA (I)	PBL (I)	ESE (V)	
45	0	0	45	90	3	70	30	20	30	50	200



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Content:

Sr. No.	Content	Total Hrs.
1	Advanced Mine Safety Legislation: DGMS organization and functions; powers of DGMS officials; statutory duties and responsibilities of owner, agent, manager, safety officer, ventilation officer, overman, sirdar, and surveyor; notice and reporting procedures; mine emergency preparedness and disaster management plans.	08
2	Mine Health and Welfare Legislation: Occupational health and hygiene standards in mines; silicosis, pneumoconiosis and dust control legislation; welfare provisions for mine workers; maternity benefits; employee compensation; provident fund and insurance schemes; labor welfare legislation applicable to mining industries.	10
3	Environmental and Sustainable Mining Legislation: Forest Conservation Act, 1980; Water (Prevention and Control of Pollution) Act, 1974; Air (Prevention and Control of Pollution) Act, 1981; Environmental Clearance procedures; mine closure guidelines; sustainable development framework; star rating system of mines; ESG practices in mining sector.	12
4	Mine Accident, Inquiry and Compensation Rules: Classification and reporting of accidents; inquiry procedures; court of inquiry; fatal and serious accident investigation; compensation provisions; legal liabilities; case studies on major mining accidents in India; role of DGMS in accident prevention.	08
5	Recent Mining Policies and Digital Governance: National Mineral Policy 2019; reforms in commercial coal mining; digital mine governance; online statutory returns; IBM online systems; mineral auction process; transparency and compliance mechanisms; sustainable and responsible mining initiatives.	07
TOTAL		45

Suggested Specification table with Marks (Theory): (For B.E. only)

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
35	35	15	15	00	00

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.



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The syllabus of Mine Legislation – II directly contributes to

SDG 3	Good health and well being
SDG 6	Clean water and Sanitation
SDG 8	Decent work and Economic growth
SDG 9	Industry Innovation and Infrastructure
SDG 12	Responsible consumption
SDG 13	Climate action
SDG 15	Life of Land
SDG 16	Peace, justice, and strong Institutions

Reference Books:

S. No.	Titles	Author(s)	Publisher and Edition with ISBN
1.	Legislation in Indian Mines: A Critical Appraisal – Vol.I & II (Revised)	Prasad and Rakesh	Lovely Prakashan
2.	The Mines Act, 1952	Bare Act	Professional Book Publishers
3.	The Coal Mines Regulations 2017	Ch. Sharma	Brilliant Publisher
4.	The Mines Act, 1952	Ch. Sharma	Brilliant Publisher
5.	Encyclopedia of Mining Law	D. D. Seth	Law Publishers (India) Pvt. Ltd., Allahabad
6.	The Mines and Minerals (Development And Regulation) Act, 1957	Bare Act	Commercial Law Publishers (India) Pvt. Ltd. 2021 Edition
7.	Explosives Act 1884	Bare Act	Professional Book Publishers
6.	The Environment (Protection) Act, 1986	Bare Act	Professional Book Publishers
7.	Taxmann's Right to Fair Compensation and Transparency in Land Acquisition Rehabilitation and Resettlement Act 2013 with Rules	Taxmann	Taxmann Publications Private Limited 978-9364557191
8.	The Mineral Conservation and Development Rules, 2017	Asia Law House	Asia Law House First Edition B07MKY9S2X
9.	The Mines Rules	L. C. Kaku	Lovely Prakashan Dhanbad 978-8179561287

List
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10.	National Mineral Policy 2019	Ministry of Mines	Government of India
11.	DGMS Circulars and Technical Guidelines	DGMS	Government Publications
12.	Forest Conservation Act and Environmental Laws	Bare Act	Professional Book Publishers

Open-Source Software/learning website:

1. <https://mines.gov.in/webportal/home>
2. <https://ibm.gov.in/IBMPortal/>
3. https://dgms.gov.in/?utm_source=chatgpt.com

List of suggested activities for Problem-based Learning (PBL):

Sr. No	PBL category	Name of the activity	No. of hours	Evaluation Criteria
1.	Complex Problem-Solving targeting relevant SDGs / Mini Project	Mini Project	10h (need to be changed as per total PBL hours)	Based on the novelty of project, technical understanding, report quality and presentation
2.	Case Study Analysis / Seminar	Seminar	15h (need to be changed as per total PBL hours)	Based on the quality of report and presentation, technical understanding
3.	Micro project	Micro project	5h (need to be changed as per total PBL hours)	Based on the novelty of project, technical understanding, quality of report and demonstration
4.	Industry/Research laboratory visit	Industry/Research laboratory visit	Visit = 5h, Report preparation = 5h Total = 10h	Based on report submitted. Report should contain observations and calculations based on industry/ lab data.
5.	Video Based Learning	Technical video-based learning related to the subject	Duration of video = 5h Report preparation = 5h Total = 10h	Report /presentation based on the video learning outcomes.
6.	Assignment / Technical Writing / Research Writing	Assignment writing. Numerical based assignment is preferable.	5 assignments of 4 h each Total = 20h	Based on the correctness of submitted assignment
7.	Group Discussion / Quiz / Simulation	Problem solving/Coding using C, C++, MATLAB, Python, SCILAB, modeling and	5 small coding-based assignment of 2h each Total = 10h	Based on the coding solution submitted.



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		Analysis software or any other software		
8.	Video Based Learning	Self-learning online course	Minimum duration of the course should be 10h	Examination based assessment at the end of course. Based on the certificate produced.
9.	Complex Problem-Solving targeting relevant SDGs / Mini Project	Identification and solution of Complex problem	Maximum 2 problems. Study of the problem and solution finding, Total = 10h	Based on the depth of the solution submitted.
10.	Video Based Learning	Videos on Industrial safety/Disaster Management aspects based on subject	Duration of video = 5h Report preparation = 5h Total = 10h	Based on quiz/report submitted
11.	Research Paper Review / Analysis	Technical paper reading and summarization of research papers based on relevant subject	5 research papers = 20h	Summarize research paper and evaluation critical parameters
12.	Poster / Chart / PowerPoint presentation	Poster/chart/power point preparation on technical topics	Duration = 6h	Based on poster/chart preparation and presentation skills
13.	Industry/Research laboratory visit	Industrial exposure for 2-3 days to observe and provide tentative solutions on society/environment/health/sustainability/any other issue	Duration = 15h for industrial exposure Problem identification and tentative solution = 10h Total = 20h	Based on evaluation of critical problems and solutions
14.	Group Discussion / Quiz / Simulation	Group Discussion on emerging/trending technical topics based on subject	Duration = 1h – 3h per topic	Based on performance in group discussion, technical depth, knowledge etc.
15.	Case Study Analysis / Seminar	Real world case studies-based learning	Duration of data collection/study = 5h Report preparation = 5h Total = 10h	Based on in-depth study, technical depth, data collected, fact finding, etc.
16.	Group Discussion / Quiz / Simulation	Application/Software development	Duration = 10h	Depending on the complexity of the Application/Software



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17.	Assignment / Technical Writing / Research Writing	Research paper publication	Duration = 10h	Based on submission of proof of publication
18.	Micro project	Upgradation/Reverse engineering studies of existing equipment of the laboratory	Duration 5h	Based on the performance of the equipment
19.	Industry/Research laboratory visit	Expert lecture/session	Duration 3h For attending the lecture/session– 2h and for report writing 1h	Based on the proof of attendance and report submitted
20.	Video Based Learning	Annotated Video Explanation of Concept/Problem	10h (Preparation + Recording + Submission)	Based on accuracy of explanation, clarity, and presentation style.
21.	Assignment / Technical Writing / Research Writing	Patent Search and Innovation Gap Identification	10h (Search + Report)	Based on number of relevant patents analyzed and identification of innovation scope.
22.	Assignment / Technical Writing / Research Writing	Preparation of a report on Indian Standard(s)	10h (study of Indian Standard(s) + report	Based on report quality and understanding of the relevant Indian Standard(s).

List of suggested activities for Term Work / Self Learning:

a. Assignments: (Seminar Topics/ Visits/Self-Learning Topics) Questions/Problems/Numerical/Exercises to be provided by the course teacher in line with the targeted COs.)

- Study and prepare a report on statutory responsibilities of mine officials.
- Analyze major mine accident case studies and suggest preventive measures.
- Prepare a compliance checklist for environmental clearance of mining projects.
- Study recent amendments in mining legislation and prepare presentation reports.

b. Micro Projects:

A Suggested list of course-wise micro-projects is mentioned herewith

- Prepare a model mine emergency response and disaster management plan.
- Design a digital compliance reporting system flowchart for mines.
- Prepare environmental monitoring formats used in mining industries.



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Note:

1. Mini Project – 10 Marks , Micro Project – 5 Marks
2. The hours allocated to specific activities should be proportionate to the total no. of PBL hours and marks.
