COURSE TYPE	COURSE CODE	NAME OF THE COURSE	L	T	P	CREDIT
DE	NFMD503	Mineral Processing Economics & Project Management	3	0	0	3

PREREQUISITE:NONE

COURSE OBJECTIVE
To impart the knowledge of economics and management related to available and executing mineral engineering projects
LEARNING OUTCOMES
• Knowledge of the global mineral industry with a focus on India • Understanding of the economics and sustainability of mineral engineering projects • Familiarization with project management and contract acquisition and execution for mineral engineering projects

NO.	TOPICS TO BE COVERED	HOURS	LEARNING OUTCOME
1	**Global scenario:** • World reserves of important minerals • Different reserves classification systems, e.g., UNFC, JORC • India's position in the global mineral industry • Depletion of mineral resources and beneficiation prospects. • Future potential of essential minerals and factors driving their demand.	4	Understanding of the global scenario of minerals
2	**Indian Mineral Industry:** • Mineral reserves in India and the classification system adopted • Contribution of minerals to Indian industrial and economic growth. • Roles &responsibilities of key Government organizations managing the mineral sector: Ministry of Mines, Ministry of Coal, Indian Bureau of Mines, Coal Controller Organization, DGMS, state departments • Major industrial revolutions and their impact on the mineral industry. • Domestic Demand and supply scenario of crucial minerals and metals. • Policy framework in India - Mineral Sector Policies, Exploration Policies, Steel Policy, MMDR and Rules framed thereunder, mineral auctions, etc. • Future scenario and steps required to	8	Familiarization with the Indian mineral industry

	meet future requirements		
3	**Economics of mineral projects:** • Typical cost components in a mineral project: Capital and operating costs (fixed and variable costs), depreciation, and return on investment. • Key financial aspects to evaluate feasibility of project - cost curve, profitability, Net Present Value, IRR	8	Understanding of the economics of the projects related to minerals
4	**Sustainable development** of the mineral industry: environment, social, resource conservation, health, Life cycle assessment, etc.	4	Understanding of the sustainability in the mineral industry
5	**Future** technologies for mineral beneficiation	2	Knowledge of the future technologies in mineral beneficiation
6	**Project Management**: Introduction, Project Planning. Planning Time Scales. Network construction for Project Planning. CPM, Gantt Chart & PERT. Project scheduling concepts and scheduling with limited resources. Technical analysis, economic and financial analysis, and social cost-benefit analysis. Implementation and Control, Project Organization, and Project Management Information Systems. Detailed Project Report. Project Evaluation, Basics of Project Management Software.	10	Knowledge of project management concepts required for the planning, scheduling and execution of mineral engineering projects
7	**Contracts** - Introduction to NIT (Notice Inviting Tender), technical and commercial contract. Project acquisition. Steps of project award, Project costing, Basic and detailed engineering, equipment purchase, Plant erection and commissioning, Performance Guarantee Test. Mechanical, civil, structural, instrumentation, and electrical aspects in plant design. Plant optimization and profitability calculations	6	Knowledge of the concepts related to project contract award and execution
	Total	**42**	

TEXT BOOKS:

1. An Introduction to Mineral Economics by K. K. Chatterjee, New Age International

REFERENCE BOOKS:

1. Mine and Mineral Economics by Subhash C. Ray and Indra N. Sinha., PHI
2. Ore Geology, Economic Minerals and Mineral Economics by S.K. Tiwari, Atlantic