

## MINERAL POLICY AND ECONOMICS

Course Type	Course Code	Name of Course	L	T	P	Credit
DE	FMD464	Mineral policy and economics	3	0	0	9

**Course Objective**

To give concept of overall economics of coal and mineral processing plants

**Learning Outcomes**

Upon successful completion of this course, students will:

- be able to understand Indian and global scenario of mineral processing activities
- be able to understand plant economics that will help in designing the plant.
- be able to understand the possible future technology.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	<b>Global scenario:</b> World reserves of important minerals. Different reserves classification systems e.g. UNFC, JORC. India's position in global mineral industry. Depletion of mineral resources and beneficiation prospects. Future potential of key minerals and factors driving their demand	7	Understanding of National and global scenario of mineral reserves and key driving factors for their technology.
2	Metal prices and markets. Production, consumption and prices of minerals. Market structure of selected minerals.	3	Understanding of mineral markets
3	<b>Indian Mineral Industry:</b> <ul style="list-style-type: none"> <li>• Mineral reserves in India and classification system adopted</li> <li>• Contribution of minerals to Indian industrial and economic growth.</li> <li>• Roles &amp; responsibility of key government organizations managing the mineral sector: Policy framework in India</li> <li>• Domestic Demand and supply scenario of key minerals and metals.</li> <li>• Future scenario and steps required to meet future requirements</li> </ul>	7	This unit will help student in understanding the government rules, environmental limitations and other related aspects affecting the mineral processing in India.
4	<b>Economics of mineral projects:</b> <ul style="list-style-type: none"> <li>• Typical cost components in a mineral project: Capital costs, operating costs (fixed and variable costs)</li> <li>• Key financial aspects to evaluate feasibility of project - cost curve, profitability, Net Present Value, IRR and depreciation accounting</li> </ul>	10	This will help students in understanding economic aspects of plant design and operation.
5	<b>Social and environmental assessment:</b> Aspects for sustainable development of mineral industry: environment, social, resource conservation, community health, Life cycle assessment, environmental audit, R-R-R approach for sustainability etc.	8	This will enable students to understand social and environmental aspects of plant design and operation.
6	Future technologies for sustainable processing of coal, minerals and metal recovery	7	This will help students to understand the future technologies.
	Total	42	

**Text Books:**

S. No.	Resource/Book Name	Author(s)/Editor(s)	Publisher
1	An Introduction to Mineral Economics	K.K. Chatterjee	New Age International

**Reference Books:**

S. No.	Resource/Book Name	Author(s)/Editor(s)	Publisher
1	Mine and Mineral Economics	Subhash C. Ray, Indra N. Sinha	Prentice Hall
2	Ore Geology, Economic Minerals and Mineral Economics	S. K. Tiwari	Atlantic Publishers