

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
DSE-8 Mineral Resources and Economics (L3, P1)	4	3	0	1	12th pass with science	Studied Earth System Science and Structural Geology, Hydrogeology or Equivalent

Learning Objectives

To develop an understanding of Earth's mineral resources and its utilization in global economic activity.

Learning outcomes

After completing the course, students will have a basic idea of mineral resources and their distribution, exploitation and economic implications

SYLLABUS OF DSE-8

Theory (45 Hours)

UNIT – I (12 Hours)

Detailed content

Mineral Resources: Resource and reserve definitions; mineral resources in industries; economic considerations; historical perspective and present. A brief overview of classification of mineral deposits with respect to processes of formation in relation to exploration strategies.

UNIT – II (12Hours)

Distribution of economic mineral resources: Major mineral deposits of India: reserve, grade, mineralogy and exploitation through time. Major mineral deposits of the World: reserve, grade, mineralogy and exploitation through time

UNIT – III (11 Hours)

Detailed content

Metallic, non-metallic, industrial, critical, strategic and gem minerals
Mineral beneficiation and mining

Unit – IV (10 Hours)

Detailed content

Mineral economics: Global metal markets and projections; National mineral policy; Mineral conservation. UNFC classification; Legal, social and environmental aspects affecting the mine cycles.

Practical Component- (30 Hours)

Exercises related to mineral resources of India and World. Reserve estimation
Projection on Indian mineral resource

Essential/Recommended readings

Evans, A.M., 2009. Ore geology and industrial minerals: an introduction. John Wiley & Sons.

Moon, C.J., Whateley, M.K.G. & Evans, A.M. 2006. Introduction to Mineral Exploration, Blackwell Publishing.

Chatterjee, K.K. (2004). An Introduction to Mineral Economics, New Age Publishers.

Recommended readings

Wills, B.A. and Finch, J.A., 2015. Wills' mineral processing technology: an introduction to the practical aspects of ore treatment and mineral recovery. Butterworth-Heinemann.

Haldar, S.K., 2013. Mineral Exploration – Principles and Applications. Elsevier Publication.

Arogyaswami, R.P.N. 1996. Courses in Mining Geology. 4th Ed. Oxford-IBH.

Clark, G.B. 1967. Elements of Mining. 3rd Ed. John Wiley & Sons..