

Discipline Specific Elective (DSE)

Name of Programme: M. Sc. Applied Geology

Course Code: GEO-516

Title of the Course: Economic Geology

No of Credits: 03

Effective from AY: 2022-23

Prerequisites for the course:	Degree of Bachelor of Science in Geology from any UGC recognized University or an equivalent examination.	
Objective:	To provide a conceptual understanding of economic minerals, processes involving formation of economic mineral, economic importance of economic minerals	
Content:	<p>Module 1: Introduction: scope of economic geology Mineral economics. Ore, tenor, gangue, resource, reserves Texture and structures of ore deposits. Classification of ore deposits.</p> <p>Module 2: Ore bearing fluids: type, nature, chemistry Physico-chemical controls of ore deposition Wall-rock alteration. Controls of ore localization. Distribution of ore deposits in relation to plate tectonic settings. Magmatic and hydrothermal deposits.</p> <p>Module 3: Ore Deposits of India (Banded Iron Formations; Iron ore deposits; Manganese ore deposits; Polymetallic ore deposits: copper, lead, zinc; Chromite deposits; Laterite and Bauxite deposits: distribution in India and genesis; Asbestos deposits of India; Barite deposits; Gold in India; Diamond deposits. Offshore and deep sea deposits. Mineral deposits of Goa.</p>	<p>15 hours</p> <p>15 hours</p> <p>15 hours</p>
Pedagogy:	Lectures/ tutorials/assignments/field study/discussion	
References/Readings	<ol style="list-style-type: none"> 1. Guilbert, J. M., & Park Jr, C. F. (2007). <i>The geology of ore deposits</i>. Waveland Press. 2. Jensen, M. L., & Bateman, A. M. (1991). <i>Economic Mineral Deposits</i> 3rd edition-Revised Printing. 3. Brown, J. C., & Dey, A. K. (1976). <i>Mineral and nuclear fuels of the Indian subcontinent and Burma</i>. 4. Roy, B. C. (1973). <i>Indian Mineral Resources, Industries, and Economics</i>. Calcutta: Editions Indian. 5. Arndt, N., Kesler, S., & Ganino, C. (2015). <i>Metals and society: An introduction to economic geology</i>. Springer. 6. Taylor, R. (2010). <i>Ore textures: recognition and interpretation</i>. Springer Science & Business Media. 	
Course outcomes	<ol style="list-style-type: none"> 1. The students will get comprehensive knowledge of economic deposits. 2. They will understand the processes involved in the initiation, movement and concentration of deposits 3. The students will be able to identify potential deposits using the knowledge of this and other geological subjects. 	