

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma in Mining Engineering

Semester: 4

Subject Name Mining Geology II

Sr. No.	Course content
1.	<p>STRATIGRAPHY:</p> <p>1.1 Physiographic Divisions of India, knowledge of standard Geological time scale including added columns of Indian Equivalent systems (Peninsular & Extra peninsular), the economic importance of Major Indian systems, Important events in Indian subcontinent recorded all through the Geological ages.</p> <p>1.2 Definitions of Archean Dharwars, Tertiaries.</p> <p>1.3 Archean / Dharwarian / Tertiary stratigraphy of a) Gujarat b) Rajasthan c) Madhyapradesh d) Maharashtra.</p> <p>1.4 Economic importance of Archean, Dharwarian, Tertiary rocks of India</p> <p>1.5 Stratigraphy of the Gondwana group of rocks/ system, what are Gondwana rocks? why they are called a group of rocks rather than a system ? Their distribution in India, classification, Gondwana land, full succession of Gondwana Rocks (Table), Description of lower Gondwanas (with special reference to Eastern Indian coal Bearing stages), important plant fossils of lower Gondwanas.</p> <p>1.6 Economic Importance of Gondwana rocks.</p>
2.	<p>ECONOMIC FUEL GEOLOGY:</p> <p>A. COAL GEOLOGY:</p> <p>2.1 Definition of coal, Rank of coal, whether coal is " Rock or " Mineral, cyclic order of coal formation, pattern of deposition in the Damodar valley Area.</p> <p>2.2 Origin of coal Insitu & drift theory with special reference to the</p>

	<p>origin of coal in the Indian subcontinent Name the places of occurrence of coal.</p> <p>2.3 Formation of coal (Brief knowledge) Biochemical stage or Humification process & Geological stage or coalification process.</p> <p>2.4 General knowledge of different coal / lignite fields of India.</p> <p>B. PETROLEUM GEOLOGY:</p> <p>2.5 Properties and origin of petroleum</p> <p>2.6 Trap formation</p> <p>2.7 Introduction of important onshore and offshore oil field of india</p> <p>2.8 Details of oil fields of the cambay-basin and other petroleum resources of Gujarat.</p>
3.	<p>OIL MINING:</p> <p>3.1 Methods of Drilling.</p> <p>3.2 Primary & secondary methods of oil production.</p>
4.	<p>ORE GENESIS:</p> <p>4.1 Definition of ore, ore mineral, Gangue mineral, Tanor of ore, Metallogenetic epochs & provines.</p> <p>4.2 Process of ore formation Knowledge of all the processes of formation of different Mineral Deposits included under the following four occurrences classes (with special reference to Indian ifany)</p> <ul style="list-style-type: none"> (1) Igneous Mineral Deposits (2) Sedimentary Mineral Deposit (3) Metamorphic Mineral Deposit (4) Secondary Enriched Mineral Deposit.
5.	<p>ECONOMIC GEOLOGY:</p> <p>5.1 Knowledge of different ore minerals of Important Metals, Use of extracted metals, Rock association of import ant ore deposits.</p>
6.	<p>GEOLOGICAL MAPPING:</p> <p>6.1 Introduction to Topographic maps, Contour maps,</p>

	<p>Geological maps and various land forms.</p> <p>6.2 Brief knowledge of the recognition of the following structures on a geological maps.</p> <ul style="list-style-type: none"> - Horizontal, inclined, vertical beds. - Folds, faults, unconformity and igneous injections.
7.	<p>GEOLOGY OF GUJARAT:</p> <p>7.1 Major rock formations of Gujarat.</p> <p>7.2 Economic geology of Gujarat with special reference to lignite, oil deposits, limestones & multimetal deposits.</p>

LABORATORY EXPERIENCES:

1. Study of Geological Time Scale.
2. Study of Stratigraphy and rock formation in Gujarat.
3. Study of Classification of Earth Materials,
important Ore Minerals, some common Association of Minerals and Rocks with Ores.
4. Study of Geographic, and Geological Classification
of Economic Minerals & Rock in India.
5. Study and sketch of Brunton compass and clinometer.
6. Study of Topographical & Contour maps and Sections.
7. Study of various Land Forms.

Reference Books:

Sr. No.	Name of Books	Author
1.	Geology of India & Burma	M. S. Krishnan
2.	Economic Geology	Sen & Ghua
3.	India Mineral Resources	D. K. Banerjee
4.	Mineral Resources & India	S. Krishna swamy
5.	Geology of Gujarat	(G.S.I. Publication)
6.	Ore deposits of India	Gokhale & Rao.
7.	Introductions to the Geology of coal & Indian coal fields	N.L.Sharma & Ram K.S.V
8.	Elements of Geological Maps	Chadha S. K