

Sl. No	Chapters	Classes	Topics	Date	Topics Released:	Sources and references
1	<b>Geomorphology and Remote Sensing</b>	Geomorphology Class 1	Introduction to Geomorphology + Endogenic and Exogenic processes	6/28/2021	<b>2.1 Geomorphology</b> 1. Basic concepts of geomorphology 2. Weathering and mass wasting 3. Landforms 4. slopes and drainage 5. Geomorphic cycles and their interpretation 6. Morphology and its relation to structures and lithology 7. Applications of geomorphology in mineral prospecting, civil engineering, hydrology and environmental studies. 8. Geomorphology of Indian subcontinent. <b>2.2 Remote Sensing</b> 1. Aerial photographs and their interpretation-merits and limitations. 2. The Electron-magnetic Spectrum. 3. Orbiting satellites and sensor systems. 4. Indian Remote Sensing Satellites. 5. Satellites data products. 6. Applications of remote sensing in geology. 7. The Geographic Information System and its applications. 8. Global Positioning System.	<b>Primary Source:</b> Notes Dictated in Class.  <b>Secondary Sources:</b> <b>1. Principles of Engineering Geology - KM Bangar</b> <b>2. Geomorphology - Savinder Singh</b> <b>3. Remote Sensing- e-PGPathshala</b>
		Geomorphology Class 2	Weathering and Mass wasting	6/28/2021		
		Geomorphology Class 3	Riverine, Aeolian and Glacial Landforms	6/28/2021		
		Geomorphology Class 4	Karst, Coastal and Volcanic Landforms	6/28/2021		
		Geomorphology Class 5	Drainage Basin; Drainage patterns	6/29/2021		
		Geomorphology Class 6	Morphology and its relation with structure and Lithology	6/29/2021		
		Geomorphology Class 7	Geomorphic Cycles	6/29/2021		
		Remote Sensing Class1	Introduction to Remote Sensing ; EMR and Spectral Signature Curve	6/30/2021		
		Remote Sensing Class2	Aerial Photography and Basic Elements of photo interpretation	6/30/2021		
		Remote Sensing Class3	Platforms+Types of Orbits+ Sensors+ Scanners+ Sensor Resolution+ Different Sensors and their Imaging System	6/30/2021		
		Remote Sensing Class4	Applications of Remote sensing in geology	7/1/2021		
		Remote Sensing Class5	Remote Sensing Data products + Indian Remote Sensing satellites	7/1/2021		
		Remote Sensing Class6	GIS and GPS + IRNSS	7/1/2021		
	<b>LIVE SESSION</b>	<b>Discussion Classes</b>	<b>PYQs + FOCUS AREA</b>	<b>7/5/2021</b>		
2	<b>Sedimentology</b>	Sedimentology Class 1	[Introduction to Sedimentology; Basics ; Process of Formation of Sedimentary rocks]	7/6/2021	1. Sedimentary rocks: Processes of formation, diagenesis and lithification. 2. Properties of sediments. 3. Clastic and non-clastic rocks-their classification, petrography and depositional environment. 4. Sedimentary facies and provenance. 5. Sedimentary structures and their significance. 6. Heavy minerals and their significance. 7. Sedimentary basins of India	<b>Primary Source:</b> Notes Dictated in Class.  <b>Secondary Sources:</b> <b>1. Principles of Engineering Geology - KM Bangar</b> <b>2. Tulane University PDFs</b>
		Sedimentology Class 2	[Lithification and Diagenesis]	7/6/2021		
		Sedimentology Class 3	[Properties of Sedimentary rocks]	7/6/2021		
		Sedimentology Class 4	[Sedimentary Rock classification part 1: Clastic and Non Clastic]	7/7/2021		
		Sedimentology Class 5	[Sedimentary Rock classification part 2: Clastic and Non Clastic]	7/7/2021		
		Sedimentology Class 6	[Sedimentary Rock classification part 3: Clastic and Non Clastic]	7/7/2021		
		Sedimentology Class 7	[Sedimentary Structures]	7/8/2021		
		Sedimentology Class 8	[Heavy Minerals; Provenance]	7/8/2021		
		Sedimentology Class 9	[Sedimentary Facies and Depositional Environment]	7/8/2021		

	LIVE SESSION	Discussion Classes	PYQs + FOCUS AREA	7/9/2021		
3	Structural geology	Structural Geology Class1	Folds; Types of Folds; Supporting features to recognise folds in field	7/9/2021	1. Principles of geologic mapping and map reading 2. projection diagrams 3. stress and strain ellipsoid 4. stress strain relationships of elastic, plastic and viscous materials 5. Strain markers in deformed rocks 6. Behaviour of minerals and rocks under deformation conditions 7. Folds and faults classification and mechanics 8. Structural analysis of folds, foliations, lineation, joints and faults, unconformities 9. Superposed deformation. 10. Time relationship between crystallization and deformation. 11. Introduction to Petro-fabrics.	<b>Primary Source:</b> Notes Dictated in Class.  <b>Secondary Sources:</b> <b>1. Principles of Engineering Geology - KM Bangar</b> <b>2. ePGPathshala</b> <b>3. Youtube Videos of Biswas Sir (IIT)</b>
		Structural Geology Class2	Joints; Types of Joints; Common Joints	7/9/2021		
		Structural Geology Class3	Faults; Classification of faults; Recognition of faults on field	7/9/2021		
		Structural Geology Class4	Unconformities; Types of Unconformities; Recognition of Unconformities; Superposed Deformation	7/10/2021		
		Structural Geology Class5	Principles of Geologic Mapping and Map Reading and Streographic Projections	7/10/2021		
		Structural Geology Class6	Stress Strain Relationship; Stages of Deformation; Brittle and Ductile substances; Strain Markers	7/10/2021		
	LIVE SESSION	Discussion Classes	PYQs + FOCUS AREA	7/13/2021		
4	Economic Geology	Economic Geology Class1	Introduction; Basic Terms of Economic Geology	7/14/2021	1. Ore, ore minerals and gangue, tenor of ore 2. Classification of ore deposits 3. Process of formation of minerals deposits 4. Controls of ore localisation 5. Ore textures and structures 6. Metallogenic epochs and provinces 7. Geology of the important Indian deposits of aluminium, chromium, copper, gold, iron, lead zinc, manganese, titanium, uranium and thorium and industrial minerals. 8. Deposits of coal and petroleum in India. 9. National Mineral Policy 10. Conservation and utilization of mineral resources 11. Marine mineral resources and Law of Sea	<b>Primary Source:</b> Notes Dictated in Class.  <b>Secondary Sources:</b> <b>1. Principles of Engineering Geology - KM Bangar</b> <b>2. Economic Geology - Umeshwar Prasad</b> <b>3. ePGPathshala</b>
		Economic Geology Class2	Bateman Classification of Mineral Deposits; Process leading to formation of Mineral Deposits part1	7/14/2021		
		Economic Geology Class3	Process leading to formation of Mineral Deposits part2	7/14/2021		
		Economic Geology Class4	Process leading to formation of Mineral Deposits part3	7/14/2021		
		Economic Geology Class5	Process leading to formation of Mineral Deposits part4	7/14/2021		
		Economic Geology Class6	Controls of Mineral Localisation; Mineral Paragenesis and Zoning	7/15/2021		
		Economic Geology Class7	Metallogenic Epochs and Provinces	7/15/2021		
	LIVE SESSION	Discussion Classes	PYQs + FOCUS AREA	7/19/2021		
5	Mining Geology	Mining Geology Class1	Introduction; Prospecting and its methods	7/20/2021	1. Methods of prospecting-geological, geophysical, geochemical and geobotanical. Techniques of sampling. 2. Estimation of reserves or ore. 3. Methods of exploration and mining metallic ores, industrial minerals and marine mineral resources. 4. Mineral beneficiation and ore dressing	<b>Primary Source:</b> Notes Dictated in Class.  <b>Secondary Sources:</b> <b>1. Principles of Engineering Geology - KM Bangar</b> <b>2. ePGPathshala</b>
		Mining Geology Class2	Geophysical Prospecting	7/20/2021		
		Mining Geology Class3	Geochemical Prospecting; Geological Prospecting; Geobotanical Prospecting	7/21/2021		
		Mining Geology Class4	Techniques of Sampling; Estimation of the Ore reserves;	7/21/2021		

		Mining Geology Class5	Mineral Beneficiation and Ore dressing	7/22/2021			
	<b>LIVE SESSION</b>	<b>Discussion Classes</b>	<b>PYQs + FOCUS AREA</b>	<b>7/23/2021</b>			
6	<b>Geochemistry and Environmental Geology</b>	Geochemistry Class1	Introduction; Cosmic abundance of Elements; Composition of Planets; Meteorites: its types, composition and Impact Sites	7/26/2021	<b>Geochemistry</b> 1. Cosmic abundance of elements 2. Composition of the planets and meteorites. 3. Structure and composition of earth and distribution of elements. 4. Trace elements. 5. Elements of crystal chemistry-types of chemical bonds, coordination number. 6. Isomorphism and polymorphism. 7. Elementary thermodynamics	<b>Primary Source:</b> Notes Dictated in Class.  <b>Secondary Sources:</b> 1. Principles of Engineering Geology - KM Bangar 2. Tulane University PDFs 3. Environmental Geography - Savinder Singh	
		Geochemistry Class2	Trace Elements; Elements of Crystal Chemistry;	7/26/2021			
		Geochemistry Class3	Coordination Number; Isomorphism and Polymorphism	7/26/2021			
		Environmental Geology Class1	Introduction; Coastal Erosion; Radioactive Waste Disposal	7/27/2021			<b>Environmental Geology</b> 1. Natural hazards, floods, landslides, coastal erosion, earthquakes and volcanic activity and mitigation. 2. Environmental impact of urbanization, 3. Open cast mining 4. Industrial and radioactive waste disposal 5. Use of fertilizers, dumping of mine waste and fly-ash 6. Pollution of ground and surface water 7. Marine pollution 8. Environment protection legislative measures in India
		Environmental Geology Class2	Disposal of Flyash; Industrial waste; Hazardous waste disposal; Open Cast Mining	7/27/2021			
		Environmental Geology Class3	Marine Pollution; Environmental Impact of Urbanisation; Environmental Protection Legislation	1/28/2021			
	<b>LIVE SESSION</b>	<b>Discussion Classes</b>	<b>PYQs + FOCUS AREA</b>	<b>7/30/2021</b>			
		Hydrogeology Class1	Introduction; Hydrological Cycle; Genetic Classification of Ground Water; Springs and types of springs;	8/2/2021	<b>Hydrogeology</b> 1. Hydrologic cycle and genetic classification of water. 2. Movement of subsurface water. 3. Springs. 4. Porosity, permeability, hydraulic conductivity, transmissivity and storage coefficient 5. classification of aquifers 6. Water-bearing characteristics of rocks 7. Groundwater chemistry 8. Salt water intrusion 9. Types of wells	<b>Primary Source:</b> Notes Dictated in Class.	
		Hydrogeology Class2	Aquifer	8/2/2021			
		Hydrogeology Class3	Aquifer Properties	8/2/2021			
		Hydrogeology Class4	Yield capacity of a well; Saltwater Intrusion	8/2/2021			

7	<b>Hydrogeology and Engineering Geology</b>	Engineering Geology Class1	Introduction; Engineering properties of rocks; Rocks as construction material;	8/3/2021	<p>9. Types of wells</p> <p>10. Drainage basin morphometry</p> <p>11. Exploration for groundwater</p> <p>12. Groundwater recharge</p> <p>13. Problems and management of groundwater</p> <p>14. Rainwater harvesting</p> <p><b>Engineering Geology</b></p> <p>1. Engineering properties of rocks</p> <p>2. Geological investigations for dams, tunnels and bridges</p> <p>3. Rock as construction material</p> <p>4. Alkali-aggregate reaction</p> <p>5. Landslides-causes, prevention and rehabilitation</p> <p>6. Earthquake-resistant structures</p>	<b>Secondary Sources:</b> 1. Principles of Engineering Geology - KM Bangar 2. Textbook of Engineering Geology by N Chenna Kesavalu
		Engineering Geology Class2	Dams and Geological investigations of Dam	8/3/2021		
		Engineering Geology Class3	Tunnels and Geological investigations of Tunnels; Bridges and Geological investigation of Bridges	8/4/2021		
		Engineering Geology Class4	Landslides; Earthquake resistant Structures	8/4/2021		
<b>LIVE SESSION</b>		<b>Discussion Classes</b>	<b>PYQs + FOCUS AREA</b>	<b>8/6/2021</b>		
8	<b>Igneous and Metamorphic Petrology</b>	Igneous Petrology Class 1	Generation of Magma	8/9/2021	<p><b>Igneous Petrology</b></p> <p>1. Generation and crystallisation of magma.</p> <p>2. Crystallisation of albite-anorthite, diopside-anorthite and diopside</p> <p>3. wollastonite-silica systems.</p> <p>4. Reaction principle.</p> <p>5. Magmatic differentiation and assimilation.</p> <p>6. Petrogenetic significance of the textures and structures of igneous rocks.</p> <p>7. Petrography and petrogenesis of granite, syenite, diorite, basic and ultrabasic groups, charnockite, anorthosite and alkaline rocks, Carbonatites.</p> <p>8. Deccan volcanic province.</p> <p><b>Metamorphic Petrology</b></p> <p>1. Types and agents of metamorphism.</p> <p>2. Metamorphic grades and zones.</p>	<b>Primary Source:</b> Notes Dictated in Class.  <b>Secondary Sources:</b> 1. Principles of Engineering Geology - KM Bangar 2. ePGPatshala 3. Tulane University PDFs 4. Principles of Igneous and Metamorphic Petrology- John D Winter
		Igneous Petrology Class 2	Types of Magma and Gibbs Phase Rule	8/9/2021		
		Igneous Petrology Class 3	Crytallisation of magma: Bowen Rection Series	8/9/2021		
		Igneous Petrology Class 4	Crystallisation Of Albite_Anorthite	8/10/2021		
		Igneous Petrology Class 5	Crystalisation of magma: Binary_Eutectic_phase Diagram	8/10/2021		
		Igneous Petrology Class 6	Magmatic Differentiation and Assimilation	8/11/2021		
		Igneous Petrology Class 7	Textures of Igneous Rocks	8/11/2021		
		Igneous Petrology Class 8	Igneous Structures	8/11/2021		
		Igneous Petrology Class 9	Deccan Volcanic Province	8/11/2021		
		Metamorphic Petrology Class10:	Introduction to Metamorphic Petrology	8/12/2021		
		Metamorphic Petrology Class11:	Metamorphism and agents of metamorphism	8/12/2021		

		Metamorphic Petrology Class12:	Types of Metamorphic rocks (Metamorphic textures)	8/13/2021	3. Phase rule. 4. Facies of regional and contact metamorphism. 5. ACF and AKF diagrams. 6. Textures and structures of metamorphic rocks. 7. Metamorphism of arenaceous, argillaceous and basic rocks. 8. Minerals assemblages 9. Retrograde metamorphism. 10. Metasomatism and granitisation, migmatites 11. Granulite terrains of India.	
		Metamorphic Petrology Class13:	Types of Metamorphism Part 1	8/13/2021		
		Metamorphic Petrology Class14:	Types of Metamorphism Part 2	8/13/2021		
		Metamorphic Petrology Class15:	Metamorphic Structures	8/14/2021		
		Metamorphic Petrology Class16:	Metamorphic Facies	8/14/2021		
	<b>LIVE SESSION</b>	<b>Discussion Classes</b>	<b>PYQs + FOCUS AREA</b>	<b>8/16/2021</b>		
9	<b>Mineralogy</b>	Minerology: Class1	Introduction to Minerology	8/17/2021	<b>Crystallography</b>	<b>Primary Source:</b> Notes Dictated in Class.  <b>Secondary Sources:</b> 1. Principles of Engineering Geology - KM Bangar 2. ePGPatshala 3. Tulane University PDFs 4. Elements of Mineralogy - Rutley
		Minerology: Class2	Physical and Chemical Properties of minerals	8/17/2021		
		Minerology: Class3	Structural Classification of Silicates	8/17/2021		
		Minerology: Class4	Mineral Groups	8/17/2021		
		Minerology: Crystallography Class5	Basics of Crystallography	8/18/2021	1. Classification of crystals into systems and classes of symmetry. 2. International system of crystallographic notation. 3. Use of projection diagrams to represent crystal symmetry. 4. Crystal defects. 5. Elements of X-ray crystallography.	
		Minerology: Crystallography Class6	Basics of Crystallography	8/18/2021		
		Minerology: Crystallography Class7	Crystallographic Axes and Axial angles	8/18/2021		
		Minerology: Crystallography Class8	Symmetry Elements	8/18/2021	<b>Optical Mineralogy</b>	
		Minerology: Crystallography Class9	Parameters and Miller Indices	8/19/2021	1. Petrological microscope and accessories. 2. Optical properties of common rock forming minerals. 3. Pleochroism, extinction angle, double refraction, birefringence, 4. Twinning	
		Minerology: Crystallography Class10	Projection Diagrams (E-pathashala doc to be shared)	8/19/2021		
		Minerology: Crystallography Class11	Crytal Forms ( Notes to be provided)	8/19/2021		
		Minerology: Crystallography Class12	Twinning (Twin law write up to be shared)	8/19/2021	<b>Minerology</b>	
		Minerology: Optical Minerology: Class13	Basics_uniaxial and Biaxial Minerals	8/20/2021	1. Physical and chemical characters of rock forming silicate mineral groups. 2. Structural classification of silicates. 3. Common minerals of igneous and metamorphic rocks.	
		Minerology: Optical Minerology: Class14	Basics_uniaxial and Biaxial Minerals	8/20/2021		
		Minerology: Optical Minerology: Class15	Optical indicatrix	8/20/2021		

		Minerology: Optical Minerology: Class16	Relief and Pleochroism	8/21/2021	4. Minerals of the carbonate, phosphate, sulphide and halide groups	
		Minerology: Optical Minerology: Class17	Intereference colors and Extinction	8/21/2021		
		Minerology: Optical Minerology: Class18	Optic axis centered interference figure (uniaxial and biaxial crystals)	8/21/2021		
	<b>LIVE SESSION</b>	<b>Discussion Classes</b>	<b>PYQs + FOCUS AREA</b>	<b>8/23/2021</b>		
10	<b>General Geology</b>	General Geology Class1	Introduction + Interior of the earth	8/24/2021	1. The Solar System 2. Meteorites 3. Geomorphic Processes 4. origin and interior of the earth 5. Radioactivity and age of earth 6. Volcanoes causes and products, volcanic belts 7. Earthquakes-causes, effects, earthquake belts, seismicity of India, intensity and magnitude, seismographs. 8. Island arcs, deep sea trenches and mid-ocean ridges 9. Continental drift evidences and mechanics 10. seafloor spreading, 11. plate tectonics (Continents and oceans)	<b>Primary Source:</b> Notes Dictated in Class.  <b>Secondary Sources:</b> <b>1. Principles of Engineering Geology - KM Bangar</b> <b>2. Geomorphology - Savinder Singh</b>
		General Geology Class2	Volcanoes and Earthquakes	8/24/2021		
		General Geology Class3	Continental Drift theory; Convectional Current theory and Sea floor spreading	8/25/2021		
		General Geology Class4	Plate Tectonics	8/25/2021		
	<b>LIVE SESSION</b>	<b>Discussion Class</b>	<b>PYQs + FOCUS AREA</b>	<b>8/27/2021</b>		
11	<b>Palaeontology</b>	Paleontology Class 1	Introduction to Paleontology	8/30/2021	1. Species- definition and nomenclature. 2. Mega fossils and Microfossils. 3. Modes of preservation of fossils. 4. Different kinds of microfossils. 5. Application of microfossils in correlation, petroleum exploration, paleoclimatic and paleo oceanographic studies. 6. Morphology, geological history and evolutionary trend in Cephalopoda, Trilobita, Brachiopoda, Echinoidea and Anthozoa. 7. Stratigraphic utility of Ammonoidea, Trilobita and Graptoloidea. 8. Evolutionary trend in Hominidae, Equidae and Proboscidae.	<b>Primary Source:</b> Notes Dictated in Class.  <b>Secondary Sources:</b> <b>1. Principles of Engineering Geology - KM Bangar</b> <b>2. Palaeontology - Jain and Anatharaman</b>
		Paleontology Class 2	Part 2 Introduction + Fossilisation	8/30/2021		
		Paleontology Class 3	Types of Fossils	8/30/2021		
		Paleontology Class 4	Modes of preservation	8/31/2021		
		Paleontology Class 5	Preparation of fossils	8/31/2021		
		Paleontology Class 6	Evolutionary trend of Equidae, Proboscidae, and Hominidae	8/31/2021		
		Paleontology Class 7	Gondwana Flora and Siwalik Fauna	9/1/2021		

		Paleontology Class 8	Gondwana Flora and Siwalik Fauna	9/1/2021	8. Evolutionary trend in Hominidae, Equidae and Proboscidea. 9. Siwalik fauna. 10. Gondwana flora and its importance	
		Paleontology Class 9	MegaFossils	9/1/2021		
		Paleontology Class 10	Trilobita, Cephalopoda, Ammonoidea, Echnoidea, Anthooa	9/1/2021		
	<b>LIVE SESSION</b>	<b>Discussion Class</b>	<b>PYQs + FOCUS AREA</b>	<b>9/3/2021</b>		
12	<b>Stratigraphy and Geology of India</b>	Stratigraphy Class 1	Introduction to stratigraphy; Stratigraphic Classification	9/6/2021	1. Classification of stratigraphic sequences: litho-stratigraphic, bio stratigraphic, chronostratigraphic and magneto-stratigraphic and their interrelationships. 2. Distribution and classification of Precambrian rocks of India. 3. Study of stratigraphic distribution and lithology of Phanerozoic rocks of India with reference to fauna, flora and economic importance. 4. Major boundary problems- Cambrian/Precambrian, Permian/Triassic, Cretaceous/Tertiary and Pliocene/Pleistocene. 5. Study of climatic conditions, paleogeography and igneous activity in the Indian subcontinent in the geological past. 6. Tectonic framework of India. 7. Evolution of the Himalayas.	<b>Primary Source:</b> Notes Dictated in Class.  <b>Secondary Sources:</b> <b>1. Principles of Engineering Geology - KM Bangar</b> <b>2. Fundamentals of historical geology and stratigraphy of India.</b>
		Stratigraphy Class 2	Stratigraphy of Precambrian and Phanerozoic rocs	9/6/2021		
		Stratigraphy Class 3	Stratigraphic Boundary Problems	9/7/2021		
		Stratigraphy Class 4	Paleoclimatic and Igneous Activity	9/7/2021		
		Stratigraphy Class 5	Tectonic Framework of India; Evolution of the Himalayas	9/7/2021		
	<b>LIVE SESSION</b>	<b>Discussion Class</b>	<b>PYQs + FOCUS AREA</b>	<b>9/10/2021</b>		