

**23CE22P2 ENGINEERING GEOLOGY LABORATORY**

<b>Course Category</b>	Professional Core	<b>Credits</b>	1.5
<b>Course Type</b>	Practical	<b>Lecture – Tutorial –Practical</b>	0-0-3
<b>Prerequisite</b>	-	<b>Sessional Evaluation</b>	30
		<b>Semester End Exam. Evaluation</b>	70
		<b>Total Marks</b>	100

<b>Course Objectives</b>	1. To identify the Megascopic types of Ore minerals & Rock forming minerals. 2. To identify the Megascopic types of Igneous, Sedimentary, Metamorphic rocks. 3. To identify the topography of the site & material selection		
<b>Course Outcomes</b>	CO1	Identify Megascopic minerals & their properties.	
	CO2	Identify Megascopic rocks & their properties.	
	CO3	Identify the site parameters such as contour, slope & aspect for topography.	
	CO4	Know the occurrence of materials using the strike & dip problems.	
	CO5	Geological map interpretation for rock type, geological structural elements.	
<b>Course Content</b>	<p><b><u>List of Experiments:</u></b></p> <ol style="list-style-type: none"> <li>Physical Properties of minerals</li> <li>Mega-scopic identification of Rock forming minerals – Quartz, Feldspar, Garnet, Mica, Talc, Chlorite, Olivine, Kyanite, Asbestos, Tourmaline, Calcite, Gypsum.</li> <li>Mega-scopic identification of Ore forming minerals – Magnetite, Hematite, Pyrite, Pyrolusite, Graphite, Chromite.</li> <li>Megascopic description and identification of Igneous rocks – Granite, Pegmatite, Gabbro, Dolerite, Syenite, Granite Porphyry, Basalt.</li> <li>Megascopic description and identification of Sedimentary rocks – Sand stone, Ferruginous sand stone, Lime stone, Shale, Laterite, Conglomerate.</li> <li>Megascopic description and identification of Metamorphic rocks –Granite Gneiss, Slate, Muscovite &amp; Biotite schist, Marble, Khondalite.</li> <li>Interpretation and drawing of sections for geological maps showing tilted beds.</li> <li>Interpretation and drawing of sections for geological maps showing Faults.</li> <li>Interpretation and drawing of sections for geological maps showing unconformities.</li> <li>Simple Structural Geology problems.</li> </ol>		

	<p>11. Borehole data for strike and dip of subsurface rock formations. 12. Strength of the rock using laboratory tests. 13. Field work – To identify Minerals, Rocks, Geomorphology &amp; Structural Geology.</p> <p><b>Lab Examination Pattern:</b></p> <p>1. Description and identification of FOUR minerals 2. Description and identification of FOUR (including igneous, sedimentary and metamorphic rocks) 3. ONE Question on Interpretation of a Geological map along with a geological section. 4. TWO Questions on Simple strike and Dip problems. 5. Borehole problems. 6. Project report on geology.</p> <p><b>References:</b></p> <p>1. M T Maruthesha Reddy, “Applied Engineering Geology Practical’s” New Age International Publishers, 2<sup>nd</sup> Edition. 2. Tony Waltham “Foundations of Engineering Geology”, Spon Press, 3<sup>rd</sup> edition.</p>
<b>E-resources</b>	<p>1. <a href="https://mg-nitk.vlabs.ac.in/List%20of%20experiments.html">https://mg-nitk.vlabs.ac.in/List%20of%20experiments.html</a> 2. <a href="https://archive.nptel.ac.in/courses/105/105/105105106">https://archive.nptel.ac.in/courses/105/105/105105106</a></p>

**CO-PO Mapping:** 3-High Mapping, 2-Moderate Mapping, 1-Low Mapping, - -Not Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	1	-	1	-	-	-	-	-	1
CO2	1	-	-	-	-	-	-	1	-	-	2	-	-	-	1
CO3	-	-	1	-	-	-	-	-	2	1	-	-	-	-	1
CO4	2	-	1	2	-	-	-	-	-	2	-	-	-	-	1
CO5	-	2	-	1	1	2	2	1	2	2	1	2	-	1	-