

**TENTATIVE TEACHING PLAN (THEORY)**Department: **Civil Engineering**Name of Teacher: **Dr. Muhammad Rehan Hakro**Subject: **Engineering Geology**Course Code: **CE129**Batch **23CE(A)**Year **1<sup>st</sup> Semester 2<sup>nd</sup>**Semester Starting Date: **18-12-2023**Semester Suspension Date: **18-04-2024****Course Learning Outcomes (CLOs):** Upon successful completion of the course, the student will be able to:

CLO	Description	Taxonomy Level	PLO
1	IDENTIFY the minerals, rocks, and their physical properties.	C1	1
2	DISCUSS structural geology, geo-hazards, hydrogeology, tunneling and site for the important Civil Engineering projects.	C2	1

S #	Topic	CLO's	No: of lecture/hrs. required
1.	Introduction to Geology, Branches of Geology	1	1
2.	Importance of Geological investigation for Civil Engineering Projects	1	2
3.	Mineral and Physical Properties of Mineral	1	2
4.	Rocks as Construction Material & Engineering Properties of Rocks	1	2
5.	Rock Cycle and formation of Rocks	1	2
6.	Weathering and Types of Weathering	1	2
7.	Sedimentary Rocks and Types of Sedimentary Rocks	1	2
8.	Metamorphic Rocks, Types of Metamorphic Rocks and Metamorphisms	1	3
9.	Igneous rocks and their classification	2	1
10.	Joints and Types of Joints	2	1
11.	Unconformities, Classification of Unconformities and their importance	2	1
12.	Fold, Types of Folds and their importance	2	1
13.	Faults ,Types, and their importance in selection of sites	2	2
14.	Landslides and Types Landslides , prediction and preventive measures	2	2
15.	Earthquake, Seismic Waves and Preventive measures against Earthquakes	2	2
16.	Earth Structure and Theory of Plate Tectonics	2	1
17.	Geological Investigation Techniques	2	1
18.	Engineering Geology of Dams and Geological parameters required in selection of dam sites	2	1
19.	Engineering Geology of Tunnel and Suitability of different rocks at Tunnel Site	2	1
20.	Stratigraphy , Geological maps, and Geological Time Scale	2	1
21.	Ground water ,Types of Aquifers and Behavior of Water in Rocks	2	1
<b>Total Lectures</b>			<b>32</b>

Signature of Teacher:

Dated: 12/12/2023

Remarks of DMRC: **APPROVED**

Signature of Chairman:

Dated: 21/12/2023