



MEHRAN UNIVERSITY OF ENGINEERING AND TECHNOLOGY JAMSHORO

Department of Civil Engineering

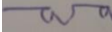


LESSON PLAN

COURSE TITLE: Engineering Geology		COURSE CODE: CE129	CREDIT HOURS: 02	MINIMUM CONTACT HOURS: 32
COURSE INSTRUCTOR: Engr. Amjad Ali (B+C+D/ Dr. Rehan Hakro (A)				
Batch: 23CE	Semester: 2 nd	Semester Starting Date: 18-12-2023	Semester Suspension Date: 18-04-2024	
COURSE LEARNING OUTCOMES:				
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	
LESSON CONTENTS AND ASSOCIATED CLO(s)				
Contents	CLO No.	Marks Assigned	Delivery Methods	Assessment Methods (Marks)
<ul style="list-style-type: none"> Introduction to Geology Introduction to Geology and Engineering Geology, Engineering Geology versus Geology, Importance of Engineering Geology for Civil Engineering Projects Geological Science and Subdivisions: Earth's Materials, Earth's Process Earth's History, Structure and Composition of the Earth Geological Times, Sequence and Principles of Stratigraphy. Mineral and Rocks Introduction to Minerals and Rocks, Identification of Minerals, Crystal Form of Minerals, Rocks: Igneous, Sedimentary and Metamorphic, Rock Cycle, Rock-Forming Minerals, Physical Properties of Rocks and Minerals Classification of Rocks and Minerals with Respect to Color, Hardness, Grain Size, Texture, Strength and Weathering Identification of Common Rock Types and Their Engineering Properties: Shales, Sandstones and Limestone. <p>No. of Lectures required: 16</p>	1	25	<ul style="list-style-type: none"> Class Lectures Class Discussion 	<ul style="list-style-type: none"> Assignment (5) Class Test (5) Mid semester Exam (15)

<ul style="list-style-type: none"> • Structural Geology • Introduction to Structural Geology, Dip and Strike, • Folds and Their Types, • Faults and their Causes, • Classification of Faults with Respect to Relative Moment, Dip and Strike of Strata, Amount of Inclination, Mode of Occurrence • Joints and Their Classification, Field Interpretation of Folds Faults and Joints, Structures due to Denudation. • Earthquakes, Earthflows & Land sliding • Tectonics Plates, Earthquakes and Their Causes, Measurements of Earthquakes, Protective Measures against Earthquakes, Earthquake Zoning of Pakistan. • Landslides and Types of Landslides, prediction and preventive measures, Introduction to Earthflows and Land Sliding, Types of Earthflows: Soil Creep, Rock Creep, Solifluction and Mudflows, Causes of Earthflows, Types of Land Sliding: Slump, Rockslides and Rock Falls, Causes of Land Slides. • Hydrogeology Introduction to Wells, Springs, Streams, Ground Water, and Glaciers, • Types of Wells, Springs, Streams, Ground Water, and Glaciers. • Tunnelling • Introduction to Tunnels, Types of Tunnels, Tunnel Construction Methods in Rocks • Geological Survey Prior to Tunnelling, Lining of Tunnels, and Its Sections. • Selection of Sites for Civil Engineering Projects Role of Geology in Selection of Sites for Dams, Reservoirs, Tunnels and Other Civil Engineering Projects, Such as Highways, Airfields and Bridges • Brief Introduction of Local Geology. <p>No. of lectures required: 16</p>	2	25	<ul style="list-style-type: none"> • Class Lectures • Class Discussion 	<ul style="list-style-type: none"> • Final Exam (25)
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ASSESSMENT DETAILS

S. No.	Assessment Activities	Marks	Activities		CLO(s) to be assessed
1	Class Test/Assignment/Project	10	Assignment(s)	1	1
			Test(s)	1	1
2	Mid Semester Exam	15	1		1
3	Final Semester Exam	25	1		2

<p>Prepared by: Engr. Amjad Ali</p>  <p>Signature:</p> <p>Dated: 13-12-2023</p>	<p>Reviewed by: Curriculum Review Committee</p>  <p>Signature:</p> <p>Dated: 12-12-2023</p>	<p>Approved by: Chairman, CED</p>  <p>Signature:</p> <p>Dated: 12-12-2023</p>
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