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SECTION : B

SEMESTER : 6<sup>th</sup>

PROGRAM : B.Sc Civil Engineering

SUBMITTED  
To : Engr Liqat Ali

COURSE : Geotechnical and Foundation  
Engineering.

## QUIZ

Write a note on software which are used in geotechnical Engineering.

Some of the important softwares related to Geo technical engineering and their significance in detail:

### 1. Plaxis 3D:

- It is a 3D software which uses finite element method of analysis to calculate deformations, stability and settlements.
- It is widely used in geo technical engineering in various applications such as tunneling, mining, embankments and excavations and rock mechanics.

### 2. GEO STUDIO:

In GEO STUDIO there are two softwares:

#### • SLOPE-W:

It is used to analyse the slope stability of different types of soils and rocks under different loading and pore water pressure conditions. It can solve both simple and complex problems and by using different theories and it will give you the factor of safety and it will clearly indicate the critical slip surface or we can say failure surface.

#### • SEEP-W:

It is a finite element tool for analysing ground water flow conditions through porous through porous media. It can be applied to simple ~~saturated~~ saturated flow problems as well as for unsaturated flow problems.

3. DEEP SOIL:

It is a 1D site response analysis which can perform both.

- linear and non linear analysis
- Equivalent linear analysis.

ASSIGNMENT

Write a geotechnical report on any civil engineering project near your area.

Trans Peshawar or Peshawar Bus Rapid Transit (Peshawar BRT) is a bus rapid transit system currently under construction by the Peshawar Development Authority (PDA). It is divided into two separate phases, the first phase of the Trans Peshawar BRT system will encompass an east-west corridor to be served by 30 stations with an initial 220 buses out of which 155 are 12 meter long buses while 65 are 18 meter long buses. 88% of funding is being provided by the Asian Development Bank. It is a bus-based Public transport system designed to improve capacity and reliability relative to a conventional bus system.

Trans Peshawar includes roadways that are dedicated to buses, and gives priority to buses at intersections where buses may interact with other traffic; alongside design features to reduce delays caused by passengers boarding or leaving buses, or purchasing fares. It aims to combine the capacity and speed of a metro with the flexibility, lower cost and simplicity of a bus system.

The project will help develop a sustainable urban transport system in Peshawar by delivering the city's first integrated bus rapid transit corridor, directly benefiting 0.5 million people. The project will comprise two interlinked outputs (i) construction of 26-km BRT corridor and associated facilities (ii) effective project management and sustainable BRT operations through institutional developments.