Nalla Narasimha Reddy Group of Institutions
NNRG Integrated Campus
NALLA NARASIMHA REDDY
Education Society's Group of Institutions - Integrated Campus
(Approved by AICTE, PCI, New Delhi. Affiliated to JNTU-Hyderabad)
Accredited by NBA NAAC
DEPARTMENT OF CIVIL ENGINEERING

29/01/2020

A REPORT ON GUEST LECTURE on

EFFECTIVE STRSSES IN GEOTECHNICAL ENGINEERING

By Mr. E. Anil Kumar, Faculty, ACE Engineering Academy

A Guest Lecture was organized by the Department of Civil Engineering to the III & IV Year Civil Engineering students on the topic **Effective Stresses in Geotechnical Engineering** by Mr E. Anil Kumar, Faculty of ACE Engineering Academy on 28/01/2020 in Civil Engineering Seminar Hall at 11 AM. HoD of CE Dr G. Subba Rao welcomed the guest and introduced the guest to the students.

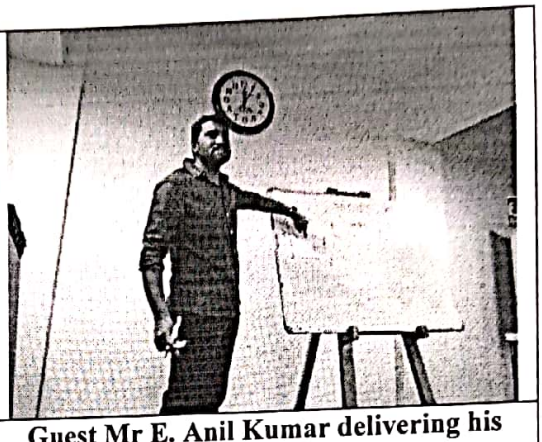
The Guest delivered his lecture on the role of Effective Stresses in Geotechnical Engineering. He explained that effective stresses play a major role in designing the foundation of any kind of structure. He covered the concept of effective stress and inter-granular stresses between the solid grains. He explained about the origin of soil and their fabric that is structural arrangement and interaction with water with that we have also attempted to classify the soils. He also discussed about the compaction characteristics of soils both course-grained soils and fine grained soils. These are the basis for the concept of effective stresses.

From the atterberg limits, classification of soils, soil structure or soil fabric and soil compaction it can be said that the presence of water in soil is very important. Water very strongly affects the engineering behavior of the most soils especially when it comes to fine grained soils. When it comes to fine grained soils the role of water is having greater relevance.

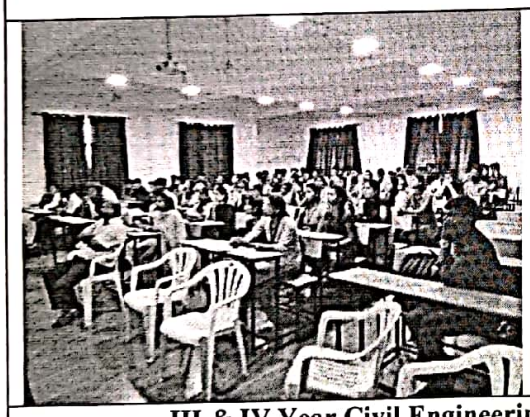
In saturated soils, the normal stress (σ) at any point within the soil mass is shared by the soil grains and the water held within the pores. The component of the normal stress acting on the soil grains, is called effective stress or intergranular stress, and is generally denoted by σ'. The remainder, the normal stress acting on the pore water, is knows as pore water pressure or neutral stress, and is denoted by "**u**". This applies to normal stresses in all directions at any point within the soil mass. In a dry soil, there is no pore water pressure and the total stress is the same as effective stress. Water cannot carry any shear stress, and therefore the shear stress in a soil element is carried by the soil grains only.

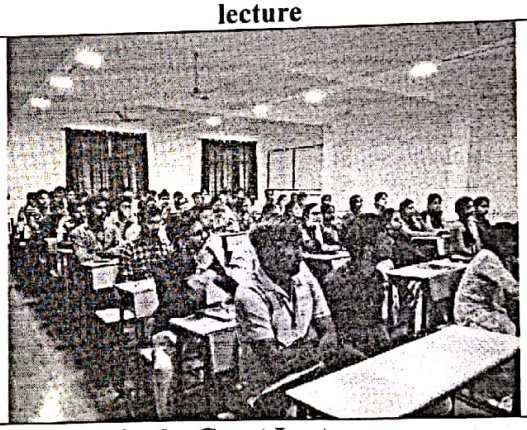
In this way, the guest explained the concept of Effective Stresses. At last, HoD thanked the guest for sparing his valuable time to deliver the lecture to the students.

HoD-CE introducing the Guest



Guest Mr E. Anil Kumar delivering his lecture





III & IV Year Civil Engineering Students in the Guest Lecture

CONSOLIDATED REPORT & OUTCOME OF THE LECTURE

The students from III & IV Year Civil Engineering had participated in the Guest Lecture based on which a brief report is prepared.

- The importance of Effective Stresses in Geotechnical Engg is learnt.
- Proper demonstration is given to the students.
- The lecture was informative.

Incharge

HoD-CE

Head of the Department
Civil Engineering
Nalla Narasimha Reddy Education Society's
Group of Institutions - Integrated Campus
Chowdariguda (Vill), Ghatkesar (Mdl), R.R.Dist - 500 088