Teaching Geotechnical Engineering using Professional Practice

Sanjeev Kumar, Ph.D., P.E.
Associate Professor
Department of Civil and Environmental Engineering
Southern Illinois University Carbondale
Carbondale, IL 62901 - 6603

It is a famous quote that “Every structure is supported on soils or rock, those that aren’t, either fly, float, or fall over.” Soils are natural deposits on which humans have no control. Soils at no two sites are likely to be the same. Even, at a particular point at a site, different types of soils exist at different depths. Several theories and formulas have been developed since the birth of soil mechanics and Geotechnical Engineering in 1925. Most of these formulas have been developed from experimental data on soils that have some particular characteristics, which may or may not be applicable to soils with even slightly different characteristics. Due to this reason, Prof. Karl Terzaghi, who has been recognized as the father of soil mechanics, in 1936 stated that the accuracy of computed results in Geotechnical Engineering using theories and relationships never exceeds that of a *crude estimate* . Therefore, principal function of teaching theories in Geotechnical Engineering in a classroom is to train students as to what and how to observe in the field. Keeping this in mind, necessity of incorporation of professional practice into the Geotechnical Engineering curriculum has been recognized by both the academicians and professional practitioners. Recently, the author has developed a full, three credit course on “Geotechnical Engineering in Professional Practice” for undergraduate seniors and graduate students. The course has successfully been taught two time at SIUC. This paper will present the details of the course, course outline, and the procedures used to teach this course.