

**Title: Soil moisture variability across soil texture regimes in disturbed and non-disturbed areas of University of Embu in Embu county.**

**Student Name and Admission Number: Suleiman Ali Ahmed, B133/11213/2014**

**Supervisor: Dr. Justin Nyaga**

### **Abstract**

Soils are complex porous media comprising of minerals, water, air and organic matter. Soil serves as a media for growth of various types of plant and reservoir of the hydrological cycle. Soil moisture is the amount of water content in a soil at a given time while soil texture is the proportion of sand, silt and clay particles in a given soil. Soil moisture is affected by various factors such as soil structure, texture, organic matter content, density of soil, and temperature. This study is aimed at understanding of how soil moisture vary with texture, moisture is a critical component in the water cycle and its assessment is of paramount important in estimating water balance of a region. In agricultural production, the variability in soil moisture may be responsible for low or high crop yields as soil moisture affects nutrient absorption. Soil texture also affects the physical characteristics and behavior of the soil, such as water retention power of the soil, nutrients holding capacity and hence vulnerable to erosion. Research has shown that soil moisture content varies greatly with texture. Different soils have different moisture content with sandy soil retaining very little water while clay soil holds maximum water, thus understanding the concept helps taking appropriate measures in management practices to enhance conservation and maintenance of soil.