

## **Soils - Key terms and concepts**

Upon completion of this course, the student should be familiar with the following terms, concepts, and programs.

### **Soil formation**

Weathering  
Soil profile  
Soil horizons  
Soil taxonomy

### **Soil Types**

Acidic soils  
Alkaline soils  
Saline soils  
Residual soils  
Aluvial soils  
Eolian soils  
Chernozem  
Calcareous soils

### **Soil components**

Soil organic matter  
Humus  
Ions  
Anions  
Cations  
Acidic and basic cations

### **Soil properties**

Soil texture  
Soil structure  
Tilth  
Hydration  
Oxidation  
Reduction  
Dissolution  
Cation Exchange Capacity (CEC)  
Buffer capacity of soils  
Percent base saturation  
Soil pH  
Electrical conductivity  
C:N ratio  
Carbon sequestration  
Soil conditioning index (SCI)

**Properties of water**

Melting point  
Boiling point  
Specific gravity  
Heat of fusion  
Heat of vaporization  
Molecular weight  
Specific heat  
Surface tension

**Soil-water relationship**

Water holding capacity of soils  
Soil porosity  
Soil respiration  
Macropores  
Micropores  
Bulk density  
Capillary water  
Gravitational water  
Water infiltration and permeability  
Water available to plants  
Field Capacity  
Wilting point

**Nutrient Cycle**

Carbon cycle  
Nitrogen cycle

**Nutrient uptake by plants**

Mobile and immobile nutrients  
Nutrient uptake by diffusion  
Transpiration  
Nutrient uptake through mass flow  
Tap roots and fibrous roots  
Root sorption zones  
Root surface sorption zones  
Legumes  
Rhizobia

**Soil related problems**

Soil compaction  
Plow pans  
Natural pans  
Nutrient toxicity  
Soil erosion