

Soil physical properties and its measurement

5 ECTS credits

Curricula description

The main aim of this course is to familiar the students with the problematics of soil physics. Soil physics plays important role in Precision Agriculture with regards to proper machinery utilization and soil protection. The information about most important soil physical properties and its relationship is provided together with the principles of its measurement. Different methods of soil compaction, soil moisture content or soil infiltration rate measurements are studied.

Course syllabus

1. Introduction to the course
2. Soil and its importance: basics, definition, division, importance, causes of loss, soil profiles
3. Physical properties of soil: grain size composition of soil
4. Physical properties of soil: disturbed & undisturbed properties of soil, specific weight
5. Physical properties of soil: measurement of cone index & soil moisture content
6. Physical properties of soil: erosion (water, wind & drop)
7. Infiltration parameters of soil: single ring & double ring method (saturated hydraulic conductivity)
8. Infiltration parameters of soil: measurement by minidisk (unsaturated hydraulic conductivity)
9. Infiltration parameters of soil: water preferential flow tracing by brilliant blue dye tracer method