

Model Decentralized Wastewater Practitioner Curriculum

SOILS 140 Soil Texture

Suggested Course Materials

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February 2005

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Agenda

<i>Time</i>	<i>Subject</i>	<i>Speaker</i>
845-900	Welcome Introductions Objectives	
900-930	Definitions What are the particle size fractions Fine earth vs coarse fragments Size of fractions Classification systems Why do we care about texture?	
930-1000	Texture Classes Texture Triangle Sand fraction modifiers Coarse fragment modifiers	
1000-1015	Break	
1015-1145	Laboratory Textural Analysis (part 1) Principles – Sieves, Stokes law, nomographs Methods (pipet and hydrometer) Laboratory exercise	
1145-1230	Lunch	
1230-200	Texture by feel Verbal description of process Demonstration of process with knowns Practice with unknowns (start with one texture and work through those common to area or region)	
200-330	Field component from pits and/or auger	
330-345	Break	
345-445	Laboratory Textural Analysis (part 2) Silt/clay determination (hydrometer)	

Data synthesis

445-500

Texture, treatment, hydrology relations
Wrap up

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Overview

Soil texture is often used as one of the primary soil characteristics to assist in determining loading rates for on-site systems. The effects of soil texture on water flow and treatment potential in on-site systems will be covered. Students will utilize bulk field-moist soil samples and dry, prepared soil samples that have been analyzed in the laboratory to calibrate their fingers during hand-texturing of soils. After analyzing known samples students will utilize their texturing skills to determine the sand, silt, clay contents and particle size class of unknown samples. Finally, students in this one-day short course will be introduced to various particle-size scales used by soil scientists and engineers and discuss the two primary methods of determining particle size in the laboratory: the hydrometer method and the pipette method.

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Goals

1. Participants will master an advanced working knowledge of soil texture used for accurate field descriptions of soil morphology.
2. Participants will begin learning how to apply their knowledge of soil texture to a typical land use question – land suitability for an on-site wastewater treatment system.

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Learning Objectives

1. To gain a better understanding of how determine texture in the field.
2. To gain a better understanding of how determine texture in the laboratory.
3. To gain a better understanding of use texture to assign LTAR.
4. To gain a better understanding of different texture systems.

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Prerequisites

SOILS 110

Soils 140 Evaluation Form

Soil Texture

Evaluation Form

Name (optional): _____

With a rating scale of 1 (Disagree) to 5 (Agree), please respond to the following questions

Review of printed materials:

	Disagree					Agree				
The text completely covers the topic area.	1	2	3	4	5					
The visuals completely cover the topic area.	1	2	3	4	5					
The discussion notes completely cover the topic area.	1	2	3	4	5					

Review of learning objectives:

I gained a better understanding of how determine texture in the field.	1	2	3	4	5
I gained a better understanding of how determine texture in the laboratory.	1	2	3	4	5
I gained a better understanding of use texture to assign LTAR.	1	2	3	4	5
I gained a better understanding of different texture systems.	1	2	3	4	5

What specific recommendations would you provide for the text. _____

What specific recommendations would you provide for the visuals.

What specific recommendations would you provide for the notes. _____

Please give specific positive comments on the topic/module. _____

Soils 140 Problem Sets

None

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Additional Materials

Munsell Color Books

Augers

Tape Measures

Several texture samples

County Soil Survey

Soil Monoliths or Cores

Soil Pits

Sieves

Sedimentation cylinder

Plunger

Lowy Pipette

Pump

Stand

Bell Jar

Funnel

Calgon

Beakers