

## A Learning Syllabus to Build Competencies for All Soil Scientists

This is a syllabus for use by soil scientists to complete a base of learning necessary for participation in the National Cooperative Soil Survey. Much of this is to be completed within the first three years of employment.

### Reading:

#### National Soil Survey Handbook

***Much of the reading listed below will be part of learning for specific training courses.***

Introduction (Part 600)  
National Cooperative Soil Survey Organization (Part 601)  
Initial Soil Survey Preparation (Part 607)  
Applying Soil Taxonomy (Part 614)  
Soil Properties and Qualities (Part 618)  
Ecological and Interpretative Groups (Part 622)  
Legend Development and Data Collection (Part 627)  
Glossary of Landform and Geologic Terms (Part 629)  
Benchmark Soils (Part 630)  
Soil Survey Investigations (Part 631)  
Soil Data Systems (Part 638)  
National Soil Information System (NASIS) (Part 639)  
Delivering Soil Survey Information (Part 644)  
Soil Map Development (Part 647)  
Land Resource Regions and Major Land Resource Areas (Part 649)  
Advance Soil Survey Information (Part 651)

## Recommended Training:

It is recommended that the ***new soil scientist training plan.doc*** be utilized to address all training needs of an employee in their developmental years. The employee's *Individual Development Plan* (IDP) should be completed and maintained within Aglearn. **Items highlighted** are recommended to be completed in the first three years of employment.

## Job Aids and OJT Modules

<b>A series of OJT modules directed towards soil scientists</b>	
Overview	<p>Go to <a href="#">On-the-Job Training (OJT) Modules</a> on the NCSS Training web pages to see what is currently available. The employee and supervisor will develop a plan to complete appropriate modules.</p> <ul style="list-style-type: none"><li>• Map unit design and mapping soils</li><li>• Soil describing</li><li>• Soil classification</li><li>• Soil survey documentation</li><li>• Sampling and characterization</li><li>• Soil survey information</li><li>• Equipment use and operation</li><li>• Ecological inventory</li><li>• Geophysical tools</li></ul>

## Agency

<b>Introduction to NRCS</b>	
Overview	For information, see Aglearn.

<b>Orientation for New Employees</b>	
Overview	For information, see Aglearn.

### **Conservation Planning**

Overview

For information, see Aglearn.

### **Managing for Excellence**

Overview

For information, see Aglearn.

### **Cultural Resources**

Overview

For information, see Aglearn.

### **Conservation Boot Camp**

Overview

It is a state/regional decision whether to send the soil scientist employee.  
For information, see Aglearn.

## **Soil Survey & Databases**

### **Basic Soil Survey: Field and Lab**

Overview

For information, use this link  
<http://www.soils.usda.gov/education/training/descriptions.html#soils>

### **Soil Geomorphology Institute**

Overview

For information, use this link.  
<http://www.soils.usda.gov/education/training/descriptions.html#soils>

## **Soil Correlation**

Overview

For information, use this link.

<http://www.soils.usda.gov/education/training/descriptions.html#soils>

## **NASIS – Basic**

Overview

For information, use this link.

<http://www.soils.usda.gov/education/training/descriptions.html#database>

## **NASIS – Understanding Soil Interpretations**

Overview

For information, use this link.

<http://www.soils.usda.gov/education/training/descriptions.html#database>

## **NASIS Basic Query & Report Writing**

Overview

For information, use this link.

<http://www.soils.usda.gov/education/training/descriptions.html#database>

## **Soil Technology- Measurement and Data Evaluation**

Overview

For information, use this link.

<http://www.soils.usda.gov/education/training/descriptions.html#soils>

## **Soil Science Institute**

Overview

For information, use this link.

<http://www.soils.usda.gov/education/training/descriptions.html#soils>

## Soils Applications

### **Web Soil Survey**

Overview	For information, use one of these links. <a href="http://websoilsurvey.nrcs.usda.gov/app/">http://websoilsurvey.nrcs.usda.gov/app/</a> <a href="http://websoilsurvey.nrcs.usda.gov/app/Help/WSS_HomePage_HowTo.pdf">http://websoilsurvey.nrcs.usda.gov/app/Help/WSS_HomePage_HowTo.pdf</a> - Under "I Want Help With..." How to use Web Soil Survey
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### **Geospatial Data Gateway**

Overview	For information, use one of these links. <a href="http://datagateway.nrcs.usda.gov/">http://datagateway.nrcs.usda.gov/</a>
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### **Soil Data Viewer**

Overview	For information, use this link. <a href="http://soildataviewer.nrcs.usda.gov/">http://soildataviewer.nrcs.usda.gov/</a> "Browse the Soil Data Viewer Online user Guide"
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### **National Cooperative Soil Survey Soil Characterization Data**

Overview	For information, use this link. <a href="http://www.soils.usda.gov/survey/nscd/">http://www.soils.usda.gov/survey/nscd/</a>
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### **Soil Technology – Applications of SDV with ArcGIS in Technical Soil Services**

Overview	For information, use this link. <a href="http://www.soils.usda.gov/education/training/descriptions.html#GIS">http://www.soils.usda.gov/education/training/descriptions.html#GIS</a>
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## Soil Survey Geospatial Database Fundamentals

### **Understanding Map Projections & Coordinate Systems**

Overview	For information, use this link, locate course in the list provided. <a href="http://training.esri.com/gateway/index.cfm?fa=aul.premiumCourses">http://training.esri.com/gateway/index.cfm?fa=aul.premiumCourses</a>
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### **Introduction to ArcGIS**

Overview	For information, use these links. <ul style="list-style-type: none"><li>• Introduction to ArcGIS 1 for USDA SCA (see Aglearn for description)</li><li>• <a href="#">Learning ArcGIS Desktop</a></li></ul>
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### **Digital Soil Survey Data Editing**

Overview	For information, use this link. <a href="http://www.soils.usda.gov/education/training/descriptions.html#GIS">http://www.soils.usda.gov/education/training/descriptions.html#GIS</a>
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## Soil Survey Remote Sensing

### **Remote Sensing-Photo Interpretation**

Overview	For information, see Aglearn.
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## Soil Geospatial Analysis

<b>Spatial Analysis</b>	
Overview	<p>Request information from the Training Coordinator for base level spatial analysis straining currently available via workshop, classroom, or distance learning.</p> <p>ESRI maintains courses addressing this issue. Use the links provided to locate information concerning the NRCS license for access to these courses and appropriate course available via the ESRI Virtual Campus.</p> <p><a href="http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/nedc/training/gis/?&amp;cid=nrcs143_024136">http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/nedc/training/gis/?&amp;cid=nrcs143_024136</a></p> <p><a href="http://training.esri.com/gateway/index.cfm?fa=aul.premiumCourses">http://training.esri.com/gateway/index.cfm?fa=aul.premiumCourses</a></p>

## GIS Database Administration

<b>Developing Metadata</b> <b>Other ArcGIS</b>	
Overview	<p>ESRI maintains courses addressing these issues. Use the links provided to locate information concerning the NRCS license for access to these courses and appropriate course available via the ESRI Virtual Campus.</p> <p><a href="http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/nedc/training/gis/?&amp;cid=nrcs143_024136">http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/nedc/training/gis/?&amp;cid=nrcs143_024136</a></p> <p><a href="http://training.esri.com/gateway/index.cfm?fa=aul.premiumCourses">http://training.esri.com/gateway/index.cfm?fa=aul.premiumCourses</a></p>

## Other

<b>Microsoft Excel</b>	
Overview	<p>A SkillSoft product is available to all employees. See description within Aglearn. Other options are usually available locally through community colleges and other sources.</p>

**Microsoft Access**

Overview

A guide for soil scientists for using Access:  
<http://soils.usda.gov/technical/access/>

**R Stats**

Overview

A product to assist soil scientists in statistically evaluating attribute and spatial data.

Training material for soil survey related topics is under development.