# OJT Training Module Cover Sheet

**TITLE:** 1001 Understand the basics of soil interpretation ratings.

<table>
<thead>
<tr>
<th>Type:</th>
<th>☐ Skill</th>
<th>X Knowledge</th>
</tr>
</thead>
</table>

**Performance Objective:** Trainee will be able to:
- Understand the basic concept of fuzzy logic (numerical ratings) as it relates to soil properties.
- Understand the basic reasoning for providing numerical rating values.
- Define and list the typical limitation rating class names.
- Define and list the typical suitability rating class names.

**Target Proficiency:**
- Awareness
- Understanding
- Perform w/ Supervision
- Apply Independently
- Proficiency, can teach others

**Trainer Preparation:**
- Trainer should be familiar with the assigned reading/review material in the lesson plan that follows.
- Pull together examples of reports from the Soil Data Mart (SDM) to illustrate various soil interpretation ratings.

**Special Requirements:**
Initiate an external learning request with a SF-182 in Aglearn for this activity. Instructions and a template are located on the training webpages for OJT modules.

**Prerequisite Modules:**
None

**Notes:**
None

**Authors:**
Emory Holsonback

**Approved by:**
Shawn McVey
The Five Step OJT Cycle for **Declarative** Training
(Knowledge)

**Cycle Step 1**
Trainer/Trainee establish shared mental model

**Cycle Step 2**
Trainee reviews materials provided

**Cycle Step 3**
Trainee performs task, provides feedback.

**Cycle Step 4**
Trainee performs task, provides feedback.

**Cycle Step 5**
Trainer/Trainee debrief.
# OJT Module Lesson

**Title:** 1001 Understand the basics of soil interpretation ratings.

<table>
<thead>
<tr>
<th>WHAT</th>
<th>WHY, WHEN, WHERE, HOW, SAFETY, QUALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cycle step 1</strong></td>
<td>Trainer and trainee review module objectives and procedures</td>
</tr>
</tbody>
</table>
| **Cycle step 2** | Trainer and trainee access via the internet and read/review:  
  - Soil Survey Manual Chapter 6:  
    - Interpretive Systematics  
  - Attached Understanding Fuzzy Logic Soil Interpretations.pdf |
| **Cycle step 3** | Trainer reviews the following with trainee: |
| 1. Fuzzy logic (numerical ratings) | Trainer should utilize a standard x/y axis graph to illustrate relationship of a soil property to the numerical ratings.  
  - Indicates relative severity or suitability of individual limiting factors.  
  - Ranges from 0.00 to 1.00.  
  - Used in conjunction with limitation and suitability ratings.  
  Trainee should include a discussion regarding assignment of rating values. |
| 2. Limitation ratings | Usually based on hazards, risks, or obstructions presented by properties or characteristics of undisturbed soil.  
  - Identifies the degree of limitation that restricts the use of a site for a specific purpose.  
  - Indicates gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).  
  - Divided into three classes:  
    - Not limited – indicates that the soil has features that are very favorable for the specified use; good performance and very low maintenance can be expected.  
    - Somewhat limited – indicates that the soil has features that are moderately favorable for the specified use; limitations can be overcome or minimized by special planning, design, or installation; fair performance and moderated |
### 3. Suitability ratings

- Based on the characteristics of the soils that influence the ease of using or adapting a soil for a specific use.
- Indicates gradations between the point at which a soil feature is suitable for the use (1.00) and the point at which the soil feature is not suitable (0.00).
- Divided into three classes:
  - Good – includes soils that have properties favorable for the specified use; satisfactory performance and low maintenance cost can be expected.
  - Fair – includes soils that have one or more properties that make the soil less suitable than those rated good.
  - Poor – includes soils that have one or more properties that are unfavorable for the specified use; overcoming the unfavorable properties requires special design, extra maintenance or cost, or field alteration.
  - A fourth class, *unsuited*, is sometimes used for soils that are unacceptable for the specified use unless extreme measures are taken to alter the soil characteristics.

<table>
<thead>
<tr>
<th>Cycle step 4</th>
<th>Cycle step 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Trainer should generate several reports in Web Soil Survey to illustrate various soil interpretation ratings</td>
<td>Debrief; trainer addresses any questions and/or concerns</td>
</tr>
<tr>
<td>• Take the measurement of learning quiz</td>
<td></td>
</tr>
</tbody>
</table>
Title: 1001 Understand the basics of soil interpretation ratings.

<table>
<thead>
<tr>
<th>WHAT</th>
<th>WHY, WHEN, WHERE, HOW, SAFETY, QUALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiz</td>
<td>Trainee completes the quiz attached below.</td>
</tr>
</tbody>
</table>

**SF-182**

Trainee and/or supervisor access Aglearn to verify completion of the module via its SF-182.
Quiz

1. The numerical (fuzzy) ratings range from 0.00 to 10.00?
   True
   False

2. A numerical (fuzzy) rating of 0.00 is the point at which the soil feature is not a limitation in a limitation style interpretation?
   True
   False

3. The limitation ratings are based on the characteristics of the soils that influence the ease of using or adapting a soil for a specific use?
   True
   False

4. Which limitation rating is most favorable?
   Not limited
   Somewhat limited
   Very limited

5. The suitability ratings are divided into four classes?
   True
   False