Course Notes – 3D-Dig Excavation Course

In this course, you will learn how to set up and execute free mode excavations in 3D-Dig. You will also learn how to perform the box cut excavation.

Excavation Basics Module

This module introduces basic concepts and settings for 3D-Dig excavation.

Concepts and Settings

The lesson covers the initial concepts of ***Inner*** and ***Outer Excavation Polygons***, together with some important excavation settings.
The introductory explanation of how to execute the ***excavation process*** (basics).
Setting up ***Excavation Template*** to dig to ***fix level***.

Inner Polygons

In this lesson, you will learn how to shape excavations by changing ***Inner Excavation Polygons***.
The lesson also gives additional details on the concepts of ***Excavation Templates*** and the progressive logging of excavated material.
Moving ***Inner Polygon*** applying multiple batters.
Editing shape of ***Inner Polygons***.

Log Material

The lesson explains ***Material Logs*** with respect to excavation, and the procedure of ***Applying Restore Point*** with respect to the excavation.

Advanced Excavation Module

In this module, you will learn about free mode excavations in 3D-Dig, including limit, selective, and multiple excavations.

Limit Excavations

This lesson introduces you to the ***Free Mode Excavation***.
How to excavate to a surface is explained.
How to use ***Excavation Limit Surfaces***.
A detailed explanation of using the ***Excavation Templates***.
A detailed explanation of ***Excavate*** page functionality of ***Terrain Appearance*** dialog box.
The use of ***Cross Section*** and the explanation of ***Inner Surfaces*** page of ***Section Settings*** dialog box.
The setting of ***Limit Surface*** via the ***Excavation Settings*** dialog box.

Selective Excavation

This lesson shows how to achieve selective excavation for ***waste*** and ***non-waste materials***.

The method with ***one Template, Limit Surfaces***, and different ***Material Logs*** for each horizon is explained and demonstrated.

Multiple Excavations

This lesson will introduce you to working with ***Multiple Excavation Templates***. Also, the lesson shows two ways to switch between ***Excavation Templates***, and how to include ***Surface Features*** in the shapes of your ***Inner Excavation Polygons***.
The operation of switching between the ***Templates*** (an explanation of how to make the template ***active*** via ***Excavation Settings*** dialog box or via ***Set Active*** button in the pop-up menu).
An explanation (tip) of how to use the ***Esc*** key while working with ***Multiple Surface Features*** during the ***Free Mode Excavation***.

Box Cut Development Module

In this module, an excavation of a box cut will be performed, accompanied by a detailed step-by-step explanation.

Box Cut Excavation

In this lesson, you will learn how to execute the ***initial setup*** for an excavation of the ***box-cut for a pit***.
Excavating out the box-cut for ***Pit A Strip 1***.

Ramp Plane

In this lesson, the preparations for the ***creation of a ramp*** are demonstrated, and the concept of ***saving to an Inner Surface*** is explained.
The set-up for the ramp and saving to the ***Inner Surface***.

Ramp Corridor

This lesson is focused on ***creating a corridor for the previously-planned ramp***. The whole procedure is demonstrated, alongside explanations of useful display options and editing commands.
Creating a 40-meter corridor for the planned ramp.
The following procedure is used:
- for the current plane surface select the option ***To Display a Trace***
- use the ***Add Feature*** command to create a new surface feature, snapped to the trace line, which runs down the edge of the ramp
- at the base of the ramp: extension up to 60-meter to create a turnout
- use the features ***Copy Parallel Whole*** command to create a copy of the feature, which is offset 40-meter up dap
- the two features should be joined to form a single feature
- set up an appropriate ***Excavation Template***
- draw the ***Inner Polygon*** by snapping to the recently created ramp feature
- apply a 45-degree batter (angle) and excavate.

Box Cut Model

This lesson covers the following themes: an excavation of the ramp, ***saving the box cut model as an Inner Surface***, and cropping down of the surface.

First Lift

In this lesson, you will learn how to use the ***Current Plane Function*** to create a horizontal bench for the first lift in the previously created box cut.