Procedure for creating inclined contours
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ArcView procedure for creating inclined contours from Digital Elevation Models

1) Open ArcView with a new view and add Spatial Analyst and 3D Analyst extensions

View: New
File: Extensions
      "3D Analyst"
      "Spatial Analyst"

2) Add Digital Elevation Model to view

File: Import Data Source
      Select Import File Type:
            USGS DEM
      Import USGS DEM Files
            File name: topo.dem (example)
      Output Grid: topo.dem
            Grid name: topo (example)
      Add Grid as a Theme to a View? Yes.

3) Create a new point theme with points at the 4 corners of the DEM extent

View: New Theme
      Feature type:
            Point
      File name:
            incplane.shp (example)
A new, editable theme is added to the view.
Use the "Draw Point" tool to add points at all 4 corners of the DEM, then save edits.
Theme: Stop Editing
      Save Edits to incplane.shp?
            Yes

4) Give the points z values to create an inclined plane dipping 45° to the north

First, measure the distance D from the north edge of the DEM to the south edge using the "Measure" tool, or derive from Grid: Properties ((Top – Bottom) or (CellSize * Rows)).
Second, select the two southern corners using the "Select Feature" button, then assign z-values to these two points in the attribute table of the points coverage.

Theme: Table

       Table: Start Editing
       Edit: Add Field
           Field Definition:
              Name: zval (example)
              Type: Number
              Width: 16
              Decimal Places: 0
Field: Calculate
       Field Calculator: zval = D
           (for an inclined plane with dip of 45°, otherwise calculate zval for given θ with:
           $\tan(dip) = zval/D$.)
Edit: Switch Selection (to select 2 north points)
Field: Calculate
       Field Calculator: zval = 0
Table: Stop Editing
       Stop Editing: Save Edits?: Yes
Windows: View1

5) Convert point coverage to a grid covering the DEM and with grid cells aligned

Theme: Clear Selected Feature (None of 4 points selected)

First, convert the point theme to a triangulated irregular network (TIN)
Surface: Create TIN from Features
       Create New Tin:
           Class: Point
           Height Source: zval
           Input as: Mass Points
           Value Field: <none>
       Output TIN Name: inctin
Second, convert the tin to a grid with grid cells overlaying the DEM grid cells
Make inctin active
Theme: Convert to Grid
       Convert inctin:
           Grid name: incgrid
       Conversion Extent: inctin
           Output Grid Extent: Same as DEM
           Output Grid Cell Size: Same as DEM
           CellSize: {automatically reset}
           Number of Rows: {automatically reset}
           Number of Columns: {automatically reset}
       Add grid (nwgrd1) as a new theme to the view

6) Add inclined plane to DEM

Analysis: Map Calculator
       Map Calculation 1: nwgrd1 + DEM
           Evaluate

7) Contour new surface (which is "Map Calculation 1" = nwgrd1 + DEM) to create inclined contours
Make "Map Calculation 1" active
Surface: Create Contours
       Contour Parameters
           Contour interval: 50 (example)
           Base Contour: 0 (example)