# Introduction to ModelMuse

Course Description:

Introduction to ModelMuse teaches how to use ModelMuse to work with groundwater models especially MODFLOW models. The course teaches how to create and visualize the input for the model, run the model, and view the model results. A combination of lectures and hands-on exercises will be used. Topics include grid generation, assigning data set values, importing data from GIS sources, visualizing input and output data, working with MODFLOW, MODPATH, ZONEBUDGET and MT3DMS. All the commonly used packages in MODFLOW will be included as well as some less commonly used ones such as the Seawater Intrusion package. Participants should already be familiar with MODFLOW.

Potential topics to include in Course:

* Orientation to general features of ModelMuse
  + Main Window
  + Data Sets and Edit Data Sets dialog box
  + Objects and Object Properties dialog box
  + MODFLOW Packages and Programs dialog box
  + Show/Hide Objects dialog box
  + Formula Editor dialog box
  + Grid/Mesh Generation
  + Documentation
    - Accessing the Help System
    - Help on Functions
    - Videos
    - Example models
  + Hands-on exercise.
* Assigning data set values
  + With default formulas
  + With objects
  + By interpolation
  + With parameters
  + Visualizing Data and Data Set Value Explanations
    - Exporting images
  + Hands-on exercise
* Importing data
  + Importing model results
  + Importing GIS data
  + Importing gridded data
  + Importing images
  + Importing text data
  + Importing existing models
  + Using input files prepared externally.
  + Hands-on exercises
* MODFLOW Packages
  + Flow packages: LPF, BCF HUF, UPW
  + Commonly used boundary packages: Well, Drain, River, General Head Boundary, Evapotranspiration, Recharge, Specified Head
  + Solvers
  + Output Control
  + Observation packages
  + Less Commonly used: Lake, Stream, Multinode wells, Subsidence, Surface water routing, Farm, Saltwater Intrusion, Unsaturated Flow, Horizontal Flow Barrier, Flow and Head Boundary, Reservoir, Evapotranspiration Segments, Drain Return
  + Hands-on exercises
* Parameter Estimation with UCODE and ModelMate.
  + Hand-on exercises
* Other versions of MODFLOW: MODFLOW-NWT, MODFLOW-OWHM, MODFLOW-LGR, MODFLOW-CFP
* MODPATH, ZONEBUDGET, MT3DMS
  + Hands-on exercise
* SUTRA
  + Hands-on exercise