We introduce the underlying concepts and practical techniques to recognize and interpret structural geometries, analyze their validity and correct compatibility problems through the balancing and restoration process of cross sections. The course uses seismic examples from rift basins and passive margins, salt-dominated basins and Fold- and Thrust Belts to introduce hands-on techniques which are also demonstrated using Lithotect structural restoration software.

Catalina Luneburg is the owner and director of TerraEx Group LLC and responsible for developing and promoting the new services model as well as daily operations. She is a recognized Structural Geology on geologic interpretation and validation, Structural Geology modeling, cross section balancing and 2D/3D time-step restorations as well as HC reserve estimates, 3D framework building and fracture predict ion analyses.

Previously, Luneburg was a Product Manager and Senior Scientist at Landmark/Halliburton developing geomodelling workflows and managing/designing software applications such as LithoTect and DecisionSpace. For several years she worked with the original LithoTect designer team at GeoLogic Systems as well as with MOVE software at Midland Valley.

Luneburg holds a doctorate in Natural Sciences from the Swiss Federal Institute of Technology in Zurich, Switzerland, and a master’s degree (Diploma) in Geology/Paleontology from the Ludwig-Maximilian University in Munich, Germany. She has published extensively in her field including several books, and has authored a number of patents. She is fluent in English, German, and Spanish, and proficient in French and Italian.

**Catalina Luneburg, PhD**

**Date:** Tuesday, 25 February, 2020  
**Time:** 8:30 am – 4 pm, breakfast from 8 am on  
**Price:** $425 regular, $375 discounted*  
**Included:** Training manual, hot lunch buffet, breakfast, beverages  
**Venue:** TBD  
**Register:** [Click here](#) or contact TerraEx Group at [info@terraexgroup.com](mailto:info@terraexgroup.com), + (303) 319 3043

* TerraEx clients, more than 2 from same company, more than 2 workshops
COURSE TOPICS

- Structural characterization of tectonic assemblages and associated HC traps
- Predict and interpret trap geometries in areas of poor and subseismic scale data
- Cross section construction techniques
- Line-length balancing and area balancing
- Fault prediction and depth-to detachment
- Kinematic models: flexural slip, vertical/oblique shear, rigid block rotation, area balancing, trishear
- Restoration methods: time-step restorations, backstripping, forward modeling

Learning outcomes

This workshop will teach you how to:
- construct a cross section from seismic data, well data and surface information
- balance and restore your section by different techniques
- validate your geologic interpretation and fix any compatibility problems

COURSE OUTLINE

1. Structural Geology Basics and
   - Deformation mechanisms and structural geometries
   - Mechanical Properties and mechanical stratigraphy
   - Structural styles and traps in HC basins

2. Cross section construction
   - Principles of section balancing: line length and area balancing
   - Choosing a pin line
   - Projection techniques, fold models

3. Balancing and Restoration Concepts
   - Principles of section balancing: line length and area balancing
   - Kinematic models and restoration algorithms: flexural slip, vertical/oblique shear, rigid block rotation, area balancing, trishear
   - Restoration methods: time-step restorations, backstripping, forward modeling

4. Compressional and Extensional Examples
   - Fold- and Thrust Belts, features and geometries
   - Faults and Folds, fault-related folding (fault propagation, fault bend, trishear)
   - Normal faults and growth faults
   - Salt-dominated basins and restoration techniques