



September 20-24, 2020

“Structural Geology applied to the HC industry”

by Catalina Luneburg, PhD

This workshop is conducted online with 3.5 - hr sessions over 5 days

This 5-session course teaches all Structural Geology concepts and methodologies relevant to hydrocarbon E&P workflows. It provides a strong foundation in basic theories of deformation and mechanics as well as the resulting structural assemblages in various tectonic settings and associated hydrocarbon traps.

The course covers the common structural styles of hydrocarbon basins worldwide, their evolution, mechanics and characteristic geometries. We work with examples and exercises from compressional and extensional settings, strike-slip, inversion, and salt tectonic scenarios as well as fractured reservoirs.

We discuss thin-skinned versus thick-skinned tectonics, mechanics and evolution of fold- and thrust belts, the development from rift to passive margins and salt-dominated basins. For every tectonic scenario we discuss interpretation methods and challenges using seismic images, well logs and surface data as well as their validation using cross-section balancing techniques



Catalina Luneburg, Ph.D.

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 expert 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 prediction 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.

This workshop will adjust to participants experience level and interest as much as possible. Therefore, we will ask you beforehand to provide some information why you are taking this course, what your experience level is with the subject matter and the type of work you want to apply the learned content.

In addition, we are offering free follow-up consultation via email or phone to discuss and advise on your specific challenges and projects.

This course is available for single participants as well as small groups (multi-client) and large groups (inhouse) – see below.

Workshop Outline

Session 1

Tectonics and petroleum systems

- Discussion of value and applications of Structural Geology in the HC industry
- Structural styles and HC basins world wide
- Concepts of deformation: stress, strain, rheology, mechanics and mechanical stratigraphy
- Maps, cross sections, seismic images and logs

Session 2

Compressional Settings

- Fold- and Thrust belts, development and geometries
- Mechanisms of folding and thrusting
- Fault-related folding: fault bend, fault propagation, trishear
- Strike-slip tectonics

Session 3

Extensional Settings

- Rifting to passive margins
- Normal faults, growth faults
- Hangingwall rollovers
- Basin inversion and reactivation of structures

Session 4

Salt Tectonics

- Salt unique properties
- Concepts of salt tectonics
- Autochthonous and allochthonous salt

Session 5

Fractured reservoirs

- Analysis of natural fractures
- Fracture proxies: curvatures, strain and more
- Fracture pattern around folds and faults

COURSE LOGISTICS AND REGISTRATION

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- Time:** Monday, Sept 20 – Friday, Sept 24, 2020 at 8 – 11:30 am Central Time US (Houston)
- Venue:** ZOOM Meeting Platform. Meeting link will be sent after payment has been made or initiated. You do not need a ZOOM license, you will only need to download the plugin upon entering. If you require a different online meeting platform, we can arrange for that.
- Included:** Manual pdf, certificates on request
- Price:** Single participant USD 975/900*; Multi-client USD 3,250, Inhouse USD 4,250
- Register:** [Follow link to register](#)

Single participant - regular price for 1 participant (public schedule)

Single participant - discount price for 1 participant unemployed, academics and > 1 course booked (public schedule)*

Multi-client price for group up to 5 participants from the same company (public or custom schedule)

Inhouse price for group up to 25 participants from the same company (custom schedule)