



**QUALITY CONTROL OF SOURCES, RECEIVERS, ARRAYS, NOISE AND ITS MITIGATION
2-DAY COURSE OUTLINE**

- ❖ **The energy Source**
 - Dynamite
 - Anaelastic radius
 - Charge coupling
- ❖ **Charge Tests**
 - Charge size
 - Charge depth
 - Cluster tests and Stacking tests
 - Repetitions – statistics-
 - Analysis before and after processing
 - Noise study
- ❖ **The Receiver**
 - One component geophones
 - Multicomponent geophones
 - Digital versus analog sensors
- ❖ **Review of the Seismic Record**
 - Direct wave, refracted wave, and other lineal events
 - Reflections
- ❖ **Types of Noise**
 - Random
 - Source generated (offset dependent)
 - Trapped Mode
 - Guided waves
 - Surface scattered waves
 - Ground roll
 - Surface converted waves
- ❖ **Aliasing**
 - Reconstruction in Frequency
 - Ranges
 - Wrap-around effect
- ❖ **Array Theory**
 - Terminology
 - Software introduction
 - Estimating signal wavelengths
 - Simple Linear array design
 - Array effective length
- ❖ **Complex Arrays**
 - Compound arrays
 - Spatial convolution & effective length
 - Practical limits of attenuation
 - Elevation changes
 - In-group statics
 - 2D and 3D arrays
- ❖ **Spatial filters and anti-aliasing**
 - Receiver interval Aliasing
 - Stacking charts
 - Sub-sampling
 - Analogy with Delta-Sigma processes