

3D Seismic Interpretation I – Mapping Structure and Stratigraphy (3 credit hours): This course will focus on the seismic expression of folding, faulting, deposition, and erosion. At the end of the course, the student will be able to identify major geologic features on 3-D seismic data, to generate simple seismic time/structure maps, and to generate and interpret simple attribute extraction maps. Along the way, the student will become adept in exploiting modern 3-D data interpretation workstation software.

Course Outline

1. Seismic signal and seismic noise.
2. Impact of seismic acquisition, processing, velocity analysis, and imaging on 3-D seismic interpretation.
3. Amplitude extraction, horizon slices, formation slices, and dip/azimuth maps.
4. Complex attributes, thin bed tuning and spectral decomposition.
5. 3-D geometric attributes – coherence, dip-azimuth, and amplitude gradients.