AMPE11 GEOPHYSICS-II

UNIT-1 GEOPHYSICS AS A TOLL FOR MAPPING OF SUBSURFACE GEOLOGICAL FEATURES

1.1 Introduction. Technology implementation.
1.2 Seismic interpretation.
1.3 Seismic characteristics and structural features.
1.4 Pitfalls due to 3D effects and shallow features.
1.5 Seismic stratigraphy. 3D data acquisition and processing.

UNIT-2 WORK STATIONS

2.1 Introduction. Hardware and Software.
2.2 Work station capabilities.
2.3 Display techniques. 3D visualization.

UNIT-3 3D INTERPRETATION

3.1 Fault recognition and mapping.
3.2 Limitations on 2D fault mapping.
3.3 Advantage of 3D diagram.
3.4 3D structural mapping. Stratigraphic interpretation.
3.5 Analysis of direct hydrocarbon indicators. Summary.

UNIT-4 SEISMIC ATTRIBUTES

4.1 Introduction. Classification of attributes.
4.2 Reservoir properties, tectonics and fault planes.
4.3 Lithology, structure and sedimentology.
4.4 Discussion and conclusions. Dip and azimuth technology.

UNIT-5 RESERVOIR EVOLUTION

5.1 Reservoir management. Process model.
5.2 Effect of rock and fluid properties.
5.3 Flow surveillance and porocity calculations.
5.4 4D seismic.
5.5 Inversion of seismic reflection data applications.
5.6 4D reservoir characterization.

References Books:

1. S.Boyer & J.J. MARI "Seismic Surveying and Well Logging" – Technip Editions, 2004
2. J.J. MARI & E. COPPENS "Well Seismic Surveying" – Technip Edition 2003.