

**MODULE I**

Rock Strengths and Stresses, Hydrostatic Pressure Forced by a Fluid. Rock Properties, Primary Migration, Reservoir Rock, Seal Rock and Secondary Migration. Reservoir Drives, Problems Related Fluids in the Reservoir.

**MODULE II**

Well Proposal, Gathering Data, Designing the Well, Drilling the Well and Testing the Well. Planning of Well, Hole and Casing Sizes and Drilling the Well. Selecting a suitable Drilling Rig, Classification of Drilling Rig, Rig Systems and Equipments.

**MODULE III**

Roller Cone Bits, Fixed Cutter Bits and Cone Bits. Optimizing Drilling Parameters- Grading the Dull Bit and Bit Selection. Functions of Drilling Fluid, Basic Mud Classification Designing the Drilling Fluid.

**MODULE IV**

Controlling the Well Path of a Deviated Well, Horizontal Wells and Multi Lateral Well. Importance of Casing in a Well, Designing the Casing String, Role of the Cement Outside the Casing, Mud Removal, Cement Design, Running and Cement Casing and other Cement Jobs. Evaluation Techniques, Physical Sampling at Surface and Downhole, Electrical Logging and Production testing.

**MODULE V**

Personnel involved in Drilling Operation, Decision Making at the Well site and in the Office, Estimating the Well Cost. Safety Meetings, New Comers on the Rig, Training and Certification, Permit to Work Systems, Safety Alerts, Safety Equipments, Minimizing Spills and Environmental Impact Studies.

**REFERENCES**

- Devereux, S., "Drilling Technology", PennWell Publishing Company, 1999.
- Azar, J.J. and G. Rabello Samuel, "Drilling Engineering", PennWell Corporation, 1937.
- Devereux, S., "Practical Well Planning and Drilling", PennWell Corporation, 1998.