WellSHARP Workover

Completion
- Design
- Fracturing
- Drilling plugs

Workover
- Operations
- Mechanical failures
- Reservoir issues
- Possible well control risks
- Risks compared to drilling operations
- Use of gases in fluids

Simulator Practice
- Demonstrate U-tube principles
- Visualize the well as a U-tube

Downhole
- Fluid gradient
- Hydrostatic pressure
- Formation pressure
- Surface pressures
- Bottom hole pressure, status of well
- Well as a U-tube, fluid density
- Formation characteristics
- Formation damage
- MASP
- MACP
- MAFW

Influx Fundamentals
- Influx fluid types
- Kick detection
- Causes of kicks
- Pump rate to overcome gas migration rate
- Shut in procedures
- Gas behavior

Barriers
- Barrier types
- Barrier classifications
- Barrier hierarchy
- Barrier envelope

Workover fluids
- Fluid properties
- Testing fluid properties
- Purpose of workover and completion fluids
- Fluid monitoring
- Solids settling
- Contaminants
- Brine characteristics
- Temperature effects
- Saturation point
- Environmental concerns
- Types of fluids

BOPs
- Annulars
- Rams
- Locking devices
- Stack configurations
- HCR valves
- Accumulator system
- Driller panel
- BOP failures
- Ring gaskets
- Function tests
- Pressure tests

Simulator Practice
- Demonstrate accumulator system functions
- Remote control panels
- Loss of rig air to bop panel
- Manifolds and backup systems

Surface/Subsurface Equipment
- Surface and subsurface equipment
- Production tree
- Correct valve
- Closing/opening sequence
- Tree/BOP removal
- Tubing hangers
**Workover Well Control Course Outline**

**Surface/Subsurface Equipment**
- Wellhead bowls
- VRPs
- BPVs
- 2 Way check valve
- Removable wellhead equipment
- Manifolds
- Connections
- Testing downhole equipment
- Lock-out procedure

**Downhole Complications**
- Tubing
- Casing
- Equipment degradation and failure
- Stuck pipe
- Blockages
- Incorrect practices
- Human error
- Trapped pressure
- Fluid complications
- Wellbore communication
- Bacteria
- Gases

**Simulator Practice**
- Demonstrate risk of over-displacement
- Bullhead operation simulation

**Circulating Well Kill Methods**
- Downhole communication
- Friction
- Pump pressure
- ECD
- Reverse circulation
- Forward circulation
- Lag time
- Complications during kill

**Simulator Practice**
- Demonstrate proper pump start up and shut down procedure
- Reverse circulation simulation
- Interpret pressures on gauges

**Volumetric and Lubricate and Bleed**
- Procedures for volumetric method
- Procedures for lubricate and bleed
- Safety margins
- Advantages and disadvantages of methods

**Simulator Practice**
- Practice volumetric method
- Lubricate and bleed

**Stripping**
- Importance of using a pressure chart during operation
- Pipe light
- Pipe heavy
- Force relative to area and pressure
- Buoyancy factor
- Operational considerations

**Simulator Practice**
- Demonstrate valve lineups to trip tank
- Stripping operation simulation

**Unconventional Well Control**
- Pill and kill
- Top kill
- Rolling the hole
- Responding to complications during well kill operations

**Crew Responsibilities**
- Teamwork
- Pre-job planning
- Importance of good handover notes
- Well control drills
- Organizing well control operations
- Locations of documentation
- Emergency response plan
- Roles and responsibilities of crew during well control operations

**Simulator Practice**
- Demonstrate proper pump start up and shut down procedure
- Forward circulation simulation
- Interpret pressures on gauges