Course Type	Course Code	Name Of Course	L	T	P	Credit
DE	NPED507	Profile Modification and Water Shut-Off	3	0	0	3

CourseObjective

The objective of this course is to provide an understanding the key aspects of water production problem oilfields and basic knowledge to control these problems & improve the oil recover

LearningOutcomes

Upon Successful Completion Of This Course,students will have the:

- Ability to learn the root causes of excessive water production in the oilfields
- Develop skills for the proper diagnosis of different sources of water production in the oil fields
- Selection of proper methods to prevent water production in the oilfields

Unit No.	TopicstobeCovered	Lecture Hours	LearningOutcome
1.	Overview of reservoir conformance problems, reservoir conformance control techniques: profile modification and water shut off.	4	This Will Help Students To Understand the basic fundamentals of profile modification and water shut off.
2	Diagnosis of water production problems: production logging techniques, use of tracers,production history plots.	5	This will help student to learn about the diagnosis of water production problems in the oilfields
3.	Mechanical Methods Of Wellbore And Near Wellbore Water shut off technologies: application of cement squeezes (foamed and acid resistant cements), and zonal isolation with packers.	6	This will help students to learn about the mechanical methods for the control of water production problems in the oilfields
4.	Improving conformance by profile modification/vertical permeability modification:permeability-reducing materials for improving conformance, and types of permeability reducing conformance improvement treatments.	6	This will help students to learn about the chemical methods for the control of water production problems in the oilfields
5.	Watercontrolinproductionwell:polymer gel placement around the wellbore, relative permeability modifiers, and organic and inorganic gels.	6	Thiswillhelpstudentstolearnabout the water control in production wells using gel treatments
6.	Selection of candidate wells: selection criteria for profile modification and water shut off job, and selection criteria for injection wells and production wells.	5	Thiswillhelpstudentstolearnabout theselectioncriteriaofwellsfor profilemodificationandwatershut off
7.	Designing gel job for oil field application: chemistry of different types of gelling systems, factors affecting gel slug design, gel volume treatment, and execution of gel job.	5	This will help student to learn about the designing gel treatment jobs in the oilfields
8.	Selected field-application: examples of conformance improvement techniques.	5	Thiswillhelpstudenttolearnabout the selected field application of conformance improvement technique
Total Contact Hours		42	

TextBooks:

1. Well Production Practical Handbook, Henri Cholet,Technips Edition,2008
2. Reservoir Conformance Improvement by Robert D.Sydanskand Laura Romero-Zerón, SPE TextBook Series, 2011.