M.TECH BRIDGE COURSE

Unit I
Hours:10

Nature of Petroleum- composition & properties; Overview of Petroleum geology & basic rock properties: Source, migration and accumulation of petroleum, Seal and trap; Overview of Petrophysical properties of rock and fluid; Brief study of fluid flow through porous media.

Unit II
Hours: 10

Fundamentals of reservoir engineering; classification of reservoir flow systems; Darcy's law of fluid flow; Pressure distribution and pressure gradient for linear, radial, compressible, steady state flow; Average permeability calculations for beds in series and beds in parallel for linear and radial reservoir geometry; Overview of drilling operation: Rig Components, Drill String, Casing policy, Drilling fluid and Cementing; Concept of oil production, gathering, treatment & storage and transportation.

Unit III
Hours: 12

Thermal and Physical properties of crude; Crude characterization techniques; Overview of Refining operations; Introduction to each unit of refinery – Distillation, Sweetening, Cracking, Reforming, Isomerization, Alkylation, Polymerization; Major equipments used in refinery; Various catalysts used in refining units;

Unit IV
Hours: 8

Introduction to gas processing, Pretreatment of gas – Merox Process, Sulfur Removal, Dehydration; General processes concerning gas Processing; Overview of LNG Value Chain; Introduction to Gas Distribution

Total Hours: 40

* This is a compulsory but non-credit bridge course which all the students have to pass in order to go to the main M.Tech. course

* Students failing this course, will be undergoing remedial teaching and will be required to pass the course in the second attempt