7th Semester	RPP7D005	Onshore & Offshore Engineering Technology	L-T-P 3-0-0	3 Credits

Module-I: **(10hours)**

Introduction to offshore oil and gas operations. Sea States and Weather, Offshore Fixed and mobile Units, Offshore Drilling, Difference in drilling from land, from fixed platform, jack up. ships and semi submersibles. Offshore Well Completion,Offshore Production systems, Deep-water technology, Divers and Safety, Offshore Environment.

Module-II: **(10 hours)**

Introduction; classification, properties of marine sediments. Consolidation and shear strength Characteristics of marine sediments. Planning and site exploration. Drilling Sampling techniques. Laboratory testing, In situ testing methods and geophysical methods.

Module-III: **(8 hours)**

Current design practices of pile supported and gravity offshore structures. Dynamic analysis of offshore structures. Centrifugal modelling. Anchor design. Break out resistance analysis and geotechnical aspects of offshore pipeline and cable design. Field instrumentation and performance observation.

Module-IV: **(8 hours)**

Offshore drilling systems and types of platforms; Ocean mining and energy systems. ROV. Onshore drilling-on shore oil rigs. onshore drilling equipments onshore rig structures- hydraulics applied in onshore rigs. construction methods of wet & dry completion.

Books:

[1] Standard Hand Book of Petroleum & Natural Gas Engineering" — 2nd Edition 2G05-William C.Lyons& Gary Gulf-Gulf professional publishing comp (Elsevier).

[2] Wellsite Geological Techniques for petroleum Exploration by Sahay.Bct al. e Petroleum Exploration Hand Book by Moody, G.D.