

AMPE27 PETROLEUM EQUIPMENT DESIGN

UNIT-1 CASING PROGRAM

- 1.1 Casing and tubing design, principles of cementing, completion added skin, well perforating, and hydraulic fracturing.
- 1.2 Drill bit design. Roller cone bits. pdc drill bits.
- 1.3 Nomenclature and iadc codes for drill bits. BHA (bottom hole assembly).
- 1.4 ESP (electrical submersible pumps). SRP (sucker rod pumping) unit design.

UNIT-2 DESIGN OF SURFACE FACILITIES

- 2.1 Design of production and processing equipment,
- 2.2 Including separation problems, treating, and transmission systems.

UNIT-3 CAPSTONE DESIGN STUDENT TEAMS APPLY KNOWLEDGE IN THE AREAS OF GEOLOGY

- 3.1 reservoir engineering, production,
- 3.2 Drilling and well completions to practical design problems based on real field data with all of the associated shortcomings and uncertainties.
- 3.3 Use of commercial software.

UNIT-4 OIL DESALTING

- 4.1 Horizontal And Spherical Electrical Dehydrators
- 4.2 Natural Gas Dehydration-Horton sphere- Natural Gas Sweetening.
- 4.3 Crude & Condensate Stabilization-design of stabilizer- Oil and Gas Treatment.
- 4.4 Treating Equipment.

UNIT-5 REFINERY EQUIPMENT DESIGN

- 5.1 Atmospheric distillation column
- 5.2 Design and construction of on/ offshore pipelines,
- 5.3 Fields Problems in pipeline, Hydrates, scaling & wax etc and their mitigation.

References Books:

1. Standard Hand Book of Petroleum & Natural Gas Engineering” – 2nd Edition 2005- William C.Lyons & Gary J.Plisga-Gulf professional publishing comp (Elsevier).