

AMPE25 ONSHORE AND OFFSHORE ENGINEERING AND TECHNOLOGY

UNIT-1 INTRODUCTION TO OFFSHORE OIL AND GAS OPERATIONS.

- 1.1 Sea States and Weather, Offshore Fixed and mobile Units, Offshore Drilling,
- 1.2 Difference in drilling from land, from fixed platform, jack up, ships and semi submersibles.
- 1.3 Offshore Well Completion, Offshore Production systems,
- 1.4 Deepwater technology, Divers and Safety, Offshore Environment.

UNIT-2 INTRODUCTION

- 2.1 Classification, properties of marine sediments.
- 2.2 Consolidation and shear strength characteristics of marine sediments.
- 2.3 Planning and site exploration.

UNIT-3 DRILLING

- 3.1 Sampling techniques.
- 3.2 Laboratory testing, In situ testing methods and geophysical methods.
- 3.3 Current design practices of pile supported and gravity offshore structures.

UNIT-4 DYNAMIC ANALYSIS OF OFFSHORE STRUCTURES.

- 4.1 Centrifugal modeling.
- 4.2 Anchor design.
- 4.3 Break out resistance analysis and geotechnical aspects of offshore pipeline and cable design.
- 4.4 Field instrumentation and performance observation.

UNIT-5 OFFSHORE SOIL MECHANICS

- 5.1 Offshore pile foundations and caissons;
- 5.2 Design of breakwaters;
- 5.3 Buoy design and mooring systems; Offshore drilling systems and types of platforms;
- 5.4 Ocean mining and energy systems. ROV.
- 5.5 Onshore drilling-on shore oil rigs.
- 5.6 Onshore drilling equipment's-onshore rig structures-hydraulics applied in onshore rigs.

References Book:

1. Petroleum Exploration Hand Book by Moody, G.B.