

Professional Engineering Services

RO Training Course for Beginners

Course Duration

3 Days

Who should attend?

Facility/utility engineers, operating personnel or anyone requiring a working level knowledge of the theory and practice of reverse osmosis plants.

Course Objectives

An Excellent knowledge of basic operation principles, layout requirements, associated components and maintenance practices for reverse osmosis (RO) plants.

Course outcome

You will gain valuable know-how related to reverse osmosis plants on:

- ✓ Understand and specify water quality & contaminants.
- ✓ Membrane types, application and configurations.
- ✓ Understand Osmosis & Reverse Osmosis principles.
- ✓ RO Plant Configuration.
- ✓ O & M basics.

Course Contents

Part I: Water Sources

- Beach wells.
- Open Intake sea water.
- High, Medium, low Brackish water.
- Surface water.
- Municipal water.

Part II: RO Chemistry

- Organics
- Suspended Solids/Particles
- Silica

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- Hardness
- COD & BOD
- Alkalinity
- Chlorine and Chloramines
- Conductivity
- Redox potential – OPR
- The Water Molecules (Cations & Anions).

Part III: Membranes Configurations

- Difference between Cross flow & Depth Flow.
- Microfiltration & Ultra-filtration & RO.
- Membranes pore size.
- Membranes Materials & Structure.

Part IV: Osmosis & Reverse Osmosis

- Osmotic Pressure.
- Applied Pressure.
- Net Driving Pressure.
- Water Flux.
- Salt Flux.
- Reverse Osmosis Definitions.

Part V: R.O Plant Basic Components

- Basic Components for RO plant.
- Factors Affecting RO performance.
- Pretreatment System Components.
- ROMAS (Reverse Osmosis Membrane Assembly).
- Post Treatment System Components.
- Pumps & Seals basics.

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Part VI: Basic RO Plant Operation & Maintenance

- Electrical & Mechanical Basics.
- Chemicals Preparation.
- Basic Principles for RO Operation & Maintenance.
- Plant parameters recording and monitoring.
- RO Cleaning Basics.
- Questions & Answers.

SUMMARY AND CLOSING

