

**IDA Academy Course**  
**“Membrane Desalination – Challenges & Solutions”**  
**July, 2018**

**Half-day Course**

**Outline**

08.00 – 8.30

**Membrane Fouling – Causes and Solutions**

- Particulate Fouling
- Colloidal Fouling
- Organic Fouling
  - Natural Organic Matter Fouling
  - Microbial Fouling (Biofouling)

8.30 – 9.15

**Algal Blooms & Oil Spills – Challenges and Mitigation Measures**

- Impact of Algal Blooms and Oil Spills on Plant Performance
- Alternative Intake Systems – Issues and Considerations
  - Subsurface Intakes
  - Open Intakes
- Alternative Pretreatment Systems – Issues and Considerations
  - DAF Clarification
  - Granular Media Filtration
  - Membrane Filtration
- RO System Designs to Handle Algal Blooms
  - SWRO Membrane Alternatives
  - Alternative RO System Configurations
- Plant Protection Measures Against Oil Spill Impacts

09.15 – 09.30 – **Coffee Break**

09.30 – 10.45

**Energy Consumption Challenges and Space Limitations**

- Energy Use Minimization
  - Equipment and Membrane Alternatives
  - Low-energy SWRO System Configurations
- Addressing Space Constraints
  - Equipment and Membrane Alternatives
  - Space Efficient SWRO and Post-treatment System Configurations

10.45 – 11.45

**Desalination Plant Case Studies**

- 130 MLD Fujairah SWRO Desalination Plant - UAE
- 218 MLD Al Dur SWRO Plant - Bahrain

11.45 – 12.00

**Questions & Answers**