Course Title: 3-Day Mechanical Seals & Systems

- Introduction Smiths Group and John Crane
- Pumps and Rotating Equipment
  - Common Pump Types in the Oil & Gas Industry
  - Centrifugal Pump Build-up
  - Seal chamber dimensions and working pressures
- Gland Packing
  - Brief overview
  - Video: Neville and the Problem Pump
- Why Mechanical Seals?
  - Simple Seal Development
- Basic Seal Principles Part 1
  - Primary Seal: Faces separated by fluid film including materials used for mating rings and primary rings
  - Handling seals correctly
  - Lapping - Why and Practical Demonstration of Lapping and Measurement
- Basic Seal Principles Part 2
  - Secondary Seal: Seal area in contact with shaft including materials used and surface finishes
  - Pusher and non-pusher seals
  - Tertiary Seal: Methods used to prevent mating ring leakage including various stationary face shapes and their uses
  - Pump Assembly Checks - Tolerances to give extended seal life
- Hands-on Assembly & Fitting Seals (Pusher & Non-Pusher Seals)
  - Points to note to prevent early seal failure
- Hands-on Fitting Metal Bellows Seal
- Basic Seal Principles Part 3
- Hydraulic Balance
  - What is it? / Why do we do it? / How do we do it?
- The Environment of a Mechanical Seal
  - Cooling the Seal Area
  - Secondary Containment
  - Multiple Seals: Tandem; Pressurised; Dual; Concentric
  - Sealant Systems
  - API Flush Plans
- Hands-on Fitting Balanced Seal
- Cartridge Seals
  - Advantages and Fitting
  - Hands-on Assembly & Fitting Cartridge Seals
- Workshop – Tour of Laboratory and Test facility
- Basic Seal Principles Part 4
- Spiral Groove Technology
  - Pumps
  - Compressors
- John Crane Seal Coding (Brief overview only)
  - Material Description Code
    - What does 35 mm T59B/QR1SH/BP mean?
    - Component and Material Codes
- Seal Materials and Selection
  - Seal Families
  - Use of Seal Selection Guide
    - Practical Exercise with Worked Examples
- ISO21049 / API 682 New Standard for Mechanical Seals
  - A Brief Overview
  - Meeting Emission legislation
- Why Seals Fail
  - Seal Failure overview
  - Seal Failure Analysis
  - Case Studies – Hands on

Please note; this is a six-day course. The final three days, Advanced Mechanical Seals, is presented as a separate course.

The course can be presented, globally; on site at any customer location in your region / country provided we have a minimum of 10 fee paying delegates. Dates and costs can be provided on request.

Note:- The optimum group size is 10; the maximum number of delegates for any course is 12.
Course Administration

Location:
John Crane EMEA Training Centre.
31 Nash Road
Trafford Park
Manchester
M17 1SS

John Crane MEA Training Centre
Jebel Ali Free Zone
PO Box 61040
Dubai
UAE

John Crane AP Training Centre Singapore Pte Ltd
15 Tuas View Place
Singapore
637432

OTHER JC LOCATIONS ARE AVAILABLE.

Dates: See John Crane Course Calendar

Who Should Attend:

Timing:
Days 1, 2, & 3: 09:00 to 16:30

Dress:
Smart Casual. T-shirt and jeans are quite acceptable). Delegates Must bring safety shoes/boots. Coveralls and safety equipment provided.

Course Fee:
Course only terms. Includes: training; course manual; course materials; refreshments and buffet lunches during course.

Airfare, Travel, accommodation and other meals are not included.

Fully inclusive terms. As above, plus: up to 3 x nights’ hotel accommodation; breakfast and evening meals; transport to/from Training Centre each day; transport to/from local Airport if required.

Airfare not included in the option above.

Accommodation:
Course only terms. We can recommend suitable local hotels, and assist with booking, if required.

Contact:
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Further Information
If you require any further information at this stage, please contact me directly or your local John Crane representative.

Keith Bolton
John Crane Global Customer Training Manager.