



# The South African Institution of Mechanical Engineering

## Introduction to Steam; Steam Engineering Principles and Heat Transfer Workshop

**Duration - 3 Days : Time - 08h30 – 16h30** (Registration at 08h00)

Manual, teas and lunch provided

**CPD Validation Number : SAIMEchE-1003-12/19**

**This workshop will earn delegates 3 credits in Category 1**

This workshop is suitable for SAIMEchE Groups 0 & 1

### SAIMEchE Group Classification

0 = Non-technical,  
e.g., HR, Finance

1 = Candidate  
(including GCC) with  
< 5 years experience

2 = Professional  
(including GCC) with <  
15 years experience

3a = Professional and  
Appointment with > 15  
years experience with  
specialist interest

3b = Senior  
Management with >  
15 years experience

### Contents

#### Introduction to Steam

- Steam – The Energy Fluid
- Steam and the Organisation
- The Steam and Condensate Loop

#### Steam Engineering Principles and Heat Transfer

- Engineering Units
- What is Steam?
- Superheated Steam
- Steam Quality
- Heat Transfer
- Methods of Estimating Steam Consumption
- Measurement of Steam Consumption
- Thermal Rating
- Energy consumption of Tanks and Vats
- Heating with Coils and Jackets
- Heating Vats and Tanks by Steam Injection
- Steam Consumption of Pipes and Air Heaters
- Steam Consumption of Heat Exchangers
- Steam Consumption of Plant Items



In the continued effort to bring quality training to the Engineering fraternity, SAIMEchE and Spirax Sarco have concluded an agreement in terms of which SAIMEchE has received the right to use Spirax Sarco's Steam Engineering Tutorials as the basis for workshops on steam and related topics.

In doing so, SAIMEchE recognises the valuable contribution made by Spirax Sarco in the development of high quality steam related products, as well as their commitment to the transfer of knowledge through an extensive range of technical literature and training material.

Delegates to the workshop will receive the complete set of Spirax Sarco tutorials covering the workshop topics, which include multiple choice questions at the end of each module.

Delegates must bring scientific calculators to the workshop.

### Who Should Attend

- Candidate Engineers
- Candidate Engineering Professionals
- Registered Engineering Professionals
- Process Managers & Process Supervisors
- Utility Managers

### Delegates' Comments

**A0112, LK, Utilities Manager:** Good course will recommend to others.

**E0112, WB, Mechanical Engineer:** Speaker was excellent and was really valuable in training.

**E0112, SvR, Candidate Mechanical Engineer:** Thanks for awesome 3days. A great experience.

**E0112, EdP:** Very interesting!! Enjoyed the course.

**D0110, JO:** I found the course very informative and will be able to apply the things learned on our projects.

**D0110, JK:** Very useful course and information, presented excellently.

**A0109, EK, Maintenance Superintendent:** Well done, looking forward to attending the follow up presentations.