



Forthcoming Planned Training Events

SAIMechE Training Events should be viewed by members and the industrial community as service benefits. Only events which have attracted sufficient delegates will take place. Events which do not have sufficient delegates by their bookings closure date will be cancelled and all relevant parties will be notified accordingly. Therefore, if you book on an event, we recommend that you delay making your travel arrangements until you have been notified that the event will take place as planned.

Workshop programmes, Delegate registration forms, and fees structure may be obtained from
Carey Evans Tel: 031 764 7136 or carey@saimeche.org.za

Introduction to Oil and Gas Piping Workshop

CPD Validation Number: SAIMechE-1016-12/19

Code	Days	Start Date	End Date	Region	Bookings Closure Date
C9418	1	29 Jan 2018	29 Jan 2018	Cape Town	10 Jan 2018
E9418	1	13 Jun 2018	13 Jun 2018	East Rand	1 Jun 2018



- Introduction and history of Pipeline Design, Codes and Standards
- Organizations associated with Pipeline Standards
- ASME B31 Codes and API Piping Standards
- Strength of Materials
- Bases for Design, Pressure Design
- Pipeline Sizing and Rating
- Branch Connections
- Selection of Fittings, Flanges, Gaskets, Valves, Bolts
- Welding and Fabrication
- Corrosion, Cracking, Fatigue Cracking, Hydrogen and H2S Effects
- Layout, Support Types and Spacing, Piperacks
- Mitigation of Vibration
- Hydrotesting, Pneumatic and Leak Testing
- Inspection and NDE Techniques
- Repair Techniques. ASME PCC2
- Grinding, Weld Repairs, Sleeves, Patches and Clamps
- Liners and Coatings

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Machinery Failure Analysis & Prevention Workshop

CPD Validation Number: SAIMechE-1104-12/20

Code	Days	Start Date	End Date	Region	Booking Closure Date
C8618	3	23 Jan 2018	25 Jan 2018	Cape Town	12 Jan 2018
E8618	3	8 May 2018	10 May 2018	East Rand	26 Apr 2018



The workshop will:

- Examine the key approaches to Preventive and Predictive Maintenance
- Identify the most frequent failure modes in rotating equipment and understanding how parts fail
- Discuss prediction and prevention of such failures
- Use a systematic approach to conduct Root Cause Failure Analysis (RCFA) on failures, to prevent repetition
- Develop an understanding of continuous reliability improvement

Develop an approach to optimise lubrication of rotating equipment

It will cover:

- Understanding Maintenance
- Preventive Maintenance
- Predictive Maintenance
- Failure processes and modes
- Typical bearing, seal, gear and other component failures
- Lubrication
- Root Cause Failure Analysis (RCFA)
- Reliability Centred Maintenance and Continuous Improvement
- Performance Measurement and KPI's

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Pressure Equipment - An Effective Guidelines to SANS 347 Workshop

CPD Validation Number: SAIMechE-1091-07/20

Code	Days	Start Date	End Date	Region	Bookings Closure Date
E4718	1	1 Feb 2018	1 Feb 2018	East Rand	22 Jan 2018
C4718	1	14 Feb 2018	14 Feb 2018	Cape Town	2 Feb 2018
A4718	1	21 Feb 2018	21 Feb 2018	Durban	9 Feb 2018



Contents

- Introduction
- Workshop objectives and benefits
- Definitions covering SANS 347
- The scope and purpose of SANS 347
- Normative references for SANS 347
- Defining pressure equipment
- Hazard categorisation
- Conformity assessment – Modules A to H
- Essential construction requirements
- Quality system requirements
- Marking of pressure equipment

Anticipated Outcome and Benefits

- Understand the reason and content of SANS 347.
- Learning the definitions related to pressure equipment.
- Understand the scope and purpose of SANS 347.
- Learning how pressure equipment is categorised in terms of SANS 347.
- Learn the pressure equipment hazard categories.
- Relate the regulations to conformity of plant and equipment.
- Learn the rules for construction of pressure equipment.
- Learn how to review quality system requirements in terms of SANS 347.
- Learn how pressure equipment should be marked to identify compliance.

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Effective Brainstorming Techniques for Engineers

CPD Validation Number: SAIMEchE-1002-12/19

Code	Days	Start Date	End Date	Region	Bookings Closure Date
E9918	2	14 Feb 2018	15 Feb 2018	East Rand	2 Feb 2017



Understanding the problem

- Mind Maps ... *Mapping the elements of a problem.*
- Five Bums on a Bench ... *Brainstorming different aspects of a problem.*
- The Fishbone ... *Finding the causal factors of a problem*

Improving on what we've got

- SCAMPER ... *Finding better solutions than the current one.*

Finding new ideas

- Brain Writing 6-3-5 ... *Generating lots of new ideas.*
- The Concept Tree ... *Generating actionable ideas from concepts.*
- Reverse Brainstorming ... *Extending further on new ideas.*

Identifying the main themes and drivers

- Affinity Clusters ... *Finding the main themes within a large number of ideas.*
- Inter-relationship Diagram ... *Finding the drivers in a multi-dimensional problem.*

Extending the mind

- The Nine Windows ... *Extending the mind in space and time.*

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Tank Design, Construction and Installation Workshop

CPD Validation Number: SAIMEchE-1107-12/20

Code	Days	Start Date	End Date	Region	Bookings Closure Date
A6418	2	7 Mar 2018	8 Mar 2018	Durban	23 Feb 2018
E6418	2	4 Apr 2018	5 Apr 2018	East Rand	23 Mar 2018
C6418	2	11 Apr 2018	12 Apr 2018	Cape Town	29 Mar 2018



With for example, crude oil demands growing globally, the design and maintenance of atmospheric and low pressure vessels for oil storage identifies a major component for storage tanks to be provided in pace with this growth. Other areas for tank design lie for example in the fabrication of tanks for the in-line storage of slurries which form part of mining flow lines. Water and sewage tanks for growing municipalities also provide specialist design and manufacturing work to be done to secure the safety of users of tanks in any form or function. Growing demands provides an opportunity for South African engineers to get more involved in the design and manufacturing of storage tanks. Using the recognized codes for tank design such as American Petroleum Institute (API) 650 BS EN 14015:2004 API 620, tank design codes reflect the culmination of decades of work by many dedicated people. Using and expanding on these standards helps to design tanks in terms of the forces brought to bear by the earth, water, chemicals and atmosphere.

Day 1 – Tank design codes, types practises, basic design calculations and installation considerations

- Overview
- Introduction
- Objectives
- Learning outcomes
- Tank design codes, legislation and standards
- Tank types, architecture and basic design considerations
- Materials and sizing
- Design of steel tanks
- Installation considerations
- Conclusion

Day 2 – Tank design, considering other materials and technologies

- Stainless steel tank design, construction and installation
- Thermo plastic tank design, construction and installation
- Fibre glass tanks design, construction and installation
- Pressure vessels design, construction and installation
- Conclusion

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TRIZ and Inventive Problem Solving Workshop

CPD Validation Number : SAIMEchE-0815-12/17

Code	Days	Start Date	End Date	Region	Bookings Closure Date
E6018	2	7 Mar 2018	8 Mar 2018	East Rand	23 Feb 2018



Overview:

The workshop teaches and demonstrates that inventive problem solving can be taught and is not dependent on luck or divine talents. Breakthrough solutions can be found by finding the contradictions in a system and solving them using the forty Inventive Principles. These solutions are significant superior than incremental/optimization methods.

- Introduction to Inventive Problem Solving (TRIZ)
- The Law of Ideality, and the Levels of Innovation
- Solving Technical and Physical Contradictions
- Benefits using TRIZ

Learning Objectives:

To understand:

- How to overcome creative thinking barriers
- Ideality & the Ideal Final Result
- The difference between physical and technical contradictions
- The Contradiction Parameters and Matrix
- How to solve contradictions using The 40 Inventive Principles
- The Contradiction Conversion and the Separation Principles
- How to apply Mann's 42 Corollary Inventive Principles

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Practical Lubrication and Lubricants

CPD Validation Number: SAIMEchE-1099-12/20



Code	Days	Start Date	End Date	Region	Bookings Closure Date
E2918	1	14 Mar 2018	14 Mar 2018	East Rand	2 Mar 2018
A2918	1	16 May 2018	16 May 2018	Durban	4 May 2018
C2918	1	12 Sep 2018	12 Sep 2018	Cape Town	31 Aug 2018

In an article called Why Should Managers Care About Oil? it is stated that, for most machines, over 80% of the wear and failures could be avoided if managers and supervisors provided proper training, tools, and support to their maintenance staff. This could significantly increase production. To be able to do that, people responsible for production need the basic knowledge of lubrication in order to make decisions that could be crucial for the company.

The workshop covers:

Understanding essential characteristics of lubricants and how they affect the lubricants' performance. Synthetics and when to use them. Understanding engine oils, gear oils, greases, ATFs, compressor oils, hydraulic and fire-resistant fluids, turbine oils, machine tool oils and cutting fluids etc. Oil cleanliness. Shelf life of lubricants, etc.

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Lubricants and Oil Monitoring

CPD Validation Number: SAIMEchE-1100-12/20

Only delegates who have attended SAIMEchE's 'Practical Lubrication & Lubricants' Workshop, held in each area on the day before this workshop, may attend. This is because it is essential that delegates fully comprehend the material previously covered.



Code	Days	Start Date	End Date	Region	Bookings Closure Date
E6918	1	15 Mar 2018	15 Mar 2018	East Rand	2 Mar 2018
A6918	1	17 May 2018	17 May 2018	Durban	4 May 2018
C6918	1	13 Sep 2018	13 Sep 2018	Cape Town	31 Aug 2018

The life of every machine depends on the effectiveness of lubrication and, therefore, the selection of proper lubricants, their correct application and monitoring are essential parts of operating the machinery. People responsible for production need the basic knowledge of lubricants to make decisions that could be crucial for the company. A wrong lubricant, or a lubricant wrongly applied, can stop the plant. A recent report claims that billions of Euros are lost each year because of unnecessary repair work which has to be carried out on processing equipment that has not been correctly lubricated. Industrial as well as automotive lubricants vary in terms of performance as well as their composition. For example, some lubricants contain synthetic oils. This workshop will help to understand when it is necessary to use synthetics.

The workshop covers:

Applying the knowledge gained in the Practical Lubrication & Lubricants workshop. Monitoring equipment without taking samples. Taking samples correctly, selecting tests and understanding and normalizing the results. Sampling frequency. Oil cleanliness monitoring. Sources of oil contamination. Oil degradation. Water in oil. Wear limits. Improving service life by filtration.

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