

Pressure Pipeline and Pump Design and Specification - A Practical Overview

A two-day course to help candidates understand the complexity and importance of **design and operation of pressure pipelines and pump stations**



Attend this course and learn about:

- Selecting appropriate materials and fittings
- Losses and water hammer
- How to read and interpret pump duty curves
- The construction process

Benefits include:

- Participation in an interactive workshop
- Various practical activities that equip attendees to handle projects effectively when back in the workplace
- A comprehensive document that will serve as a reference manual
- CPD credits

Presenter:

Patrick Maisiri Pr Eng Pr CPM BSc Eng(Hons) (Civil)



COURSE DATES & VENUES

Dates TBC 2025 (Online via Zoom)
TIMES: 08:00 for 08:30 to 16:30

Please contact Lizéle du Preez for more information on upcoming courses: Lizelle@saicepdp.org / 011 476 4100

REGISTRATION

Visit <https://store.saice.org.za/training-courses>
OR <https://www.cesa.co.za/sce/>
OR email Academy@saicepdp.org

WHO SHOULD ATTEND

The course helps graduates apply their theoretical training in practice. It is therefore recommended for:

- Staff working in the industry with very little experience or who are about to become involved in designing of pressure pipelines
- Candidate engineers, technologists and technicians
- Experienced personnel looking for a refresher in pressure pipeline and pump station design

SAICE-PDP, through the Candidate Academy, is the sole provider for this course, with scheduled public courses hosted by SAICE and CESA.

COURSE CONTENT

INTRODUCTION

- Case studies

UNDERSTANDING PIPES, MATERIALS & PUTTING IT ALL TOGETHER

- Pipes
- Fittings
- Valves
- Joints
- Cathodic protection

UNDERSTANDING THE MOVEMENT OF WATER & LOSS IN HYDRAULIC HEAD

- Pipe friction
- Hydraulic gradient
- Water hammer
- Break pressure tanks

ADDING ENERGY TO WATER

- Pumps (single- & multistage pumping)
- Parallel pump operation
- Net Positive Suction Head
- How to read a pump duty curve

WHAT HAPPENS AFTER THE DESIGN?

- Anchor blocks
- Thermal expansion of pipes
- Drawings and details
- Specifications
- Construction
- Trenching and pipe bedding
- Measurement and quantities
- Testing

DID I UNDERSTAND WHAT WAS BEING SAID?

- Hands-on activities:
- D'Arcy-Weisbach equation
- Flow chart calculations
- Calculating steel pipe wall thickness
- Pump duty curves
- Anchor blocks
- Thermal expansion of pipes

ABOUT YOUR FACILITATORS

Patrick Maisiri obtained his BSc (hons) in Civil Engineering from the University of Zimbabwe in 1993. He started his career at the Department of Water Development in Harare, and also worked at the Zimbabwe National Water Authority before moving to Windhoek where he worked at a consulting firm. In 2005 he moved to South Africa where he held senior management positions at Water Boards, the DBSA, AngloGold Ashanti and consulting firms. He has worked on major pipeline projects as senior project and design engineer in various provinces.

Patrick is registered as a Professional Engineer with ECSA, a Professional Construction Project Manager with SACPCMP and a member of SAICE.

In-house courses are available. Contact Lizelle at Lizelle@saicepdp.org for further information.

WHAT TO BRING TO THE COURSE

- Pencil and eraser
- Ruler
- Scientific calculator

- Laptop with Excel recommended for ONLINE courses



The Candidate Academy's philosophy is to support candidates on their road to registration with ECSA, by helping them through the transition from theoretical training to the 'how' of engineering projects and processes. The Academy offers practical, hands-on training relevant to experiences in the workplace.

**candidate
academy**
the road to registration – tower above the rest