

CPD: 2 CREDITS

# 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:

DuP van Renen Pr Eng BEng(Hons)(Civil)



## COURSE DATES & VENUES

21 & 23 June 2022 (Online via Zoom)  
04 & 06 October 2022 (Online via Zoom)

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

TIMES: 08:00 for 08:30 to 16:30

## REGISTRATION

To register, visit <https://store.saice.org.za/training-courses>  
OR email [Academy@saicepdp.org](mailto: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 is the sole provider for this course, with scheduled public courses hosted by SAICE.**

## 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 FACILITATOR

**DuP van Renen** completed his BEng(Hons) degree at Stellenbosch University and started his engineering career at the Department of Water Affairs. He was involved in the planning of several water treatment works and water supply schemes and has extensive experience in water and sanitation in local government and consulting.

In-house courses are available.

Contact Lizéle at [lizelle@saicepdp.org](mailto:lizelle@saicepdp.org) for further information.

### WHAT TO BRING TO THE COURSE

- Pencil and eraser
- Ruler
- Scientific calculator



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