



cooperative
governance

Department:
Cooperative Governance
REPUBLIC OF SOUTH AFRICA

MUNICIPAL INFRASTRUCTURE
SUPPORT AGENT (MISA)



CPD 2 credits (ECSA)

Pressure Pipeline and Pump Station Design and Specification – A Practical Overview

The Municipal Infrastructure Support Agent (MISA) in partnership with SAICE Professional Development & Projects (SAICE-PDP) invites you to attend this 2-day course which aims 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 to equip attendees to handle projects when back in the workplace
- A comprehensive course document that will serve as a reference manual
- 2 CPD credits (ECSA)

Presenter:

DuP van Renen Pr Eng



COURSE SCHEDULE

Venue: Online via Zoom

Dates: 22 & 24* February 2022
* no training on 23 February

Time: 08:30 for 09:00 to 16:30

REGISTRATION

To register, visit www.saicepdp.org

For more details contact Zan Mlambo:

Email zan@saicepdp.org / Tel: 011 476 4100

WHO SHOULD ATTEND

The course helps municipal attendees to 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
- Engineers, technologists and technicians
- Experienced staff in need of a refresher in pressure pipeline and pump station design

COURSE OUTLINE

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

WHAT TO BRING TO THE COURSE

- Scientific calculator
- Pencil and eraser
- Scale ruler

For online courses, it is recommended to have the following installed on your computer:

- MS Excel
- The Zoom app

ABOUT YOUR FACILITATOR

DuP van Renen completed his BEng(Hons)(Civil) 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.



SAICE-PDP's Municipal Academy was established to support practitioners employed in local government with applying theoretical knowledge and relevant legislation in practice.

**municipal
academy**
the road to service delivery



MISA's mandate is to provide technical support and advice to municipalities, whilst strengthening their capacity, for effective infrastructure planning, delivery, operations and maintenance.