

# GRUNDFOS TRAINING SCHEDULE 2019

*Cape Town, South Africa*

be  
think  
innovate

GRUNDFOS 

# MESSAGE FROM THE SSA AREA MANAGING DIRECTOR



“To make knowledge work productively is the great management task of this century, just as to make manual work productive was the great management task of the last century” - Peter Drucker. When Grundfos Europe undertook the initiative to expand the service offering in Africa to include a comprehensive training facility, it would change the way we at Grundfos (Pty) Ltd “GZA” would conduct our business in the future.

Having already lead in product market areas for many years, GZA would create the foundation to become a leader in pump knowledge transfer. The management at GZA believe that the three critical success factors for doing business in emerging markets are; a quality and reliable product, a robust logistics supply chain and an inbuilt, in-house, innovative technical knowledge that understands the demands of the technical environment.

Whilst there are still engineering skills on the African continent, the engineering “braindrain”, means that organisations seeking high levels of professional or technical skills in the less attractive industries, such as the pump industry, are left short-changed. Even leading international companies find it difficult to find and attract experienced technical sales engineers to provide the necessary service level to satisfy its customers. The challenge, now, is to capture the local and practical tacit knowledge that is still available, entrenched in the specialists minds who have worked within this industry and transfer it to the current and next generation of pump sales engineers.

Some quarters would consider the concept of a training facility in South Africa as part of a short-cut to a BEE score card, we at GZA believe that as a responsible corporate citizen in our industry and on the African continent, it is essential that we not only participate in the role of knowledge sharing, but that we LEAD in this area. After all this is very much the essence of the BE -“BEING RESPONSIBLE”- in BE>THINK>INNOVATE. The Academy is ultimately not a resource only for South Africa, but indeed a gift for the people of Africa. In this we are living the concept proposed by K.E. Rudestam that “knowledge being of the nature that it is not “found” or “discovered”, but rather constructed through interaction and the engaging of minds”.

On a more local level we have set our sights and strategy on being the “leading pump knowledge company”, with our dream of being identified as the “smartest” pump people on the continent. This booklet forms another cornerstone in what we believe is an ambitious but essential objective. We trust that you will find within its’ pages, a module that will help you to both develop your own or your staff’s competencies and ultimately your Grundfos business.

We wish you all the best with your endeavours.

**Henning Sandager**

Area Managing Director: SSA

# WHAT IS IT THAT WE OFFER AND DO?



The Grundfos South Africa Training Academy was established in 2006, primarily to meet the dire skills shortfall of qualified pumps sales and technical support people in South Africa. Grundfos were also aware that the industry in general required a facility to skill young graduate people to enter the industry, as the Government's national plan of providing clean water and sanitation for all, would not be met with the limited skills available.

On occasion the Academy appoints external training suppliers to provide a central mass training of specific courses, for our staff, at our premises at group rate prices. In many instances we allow and invite our clients staff to attend the course at the reduced rate. Many of these programs are held outside of normal office hours allowing a minimum of lost work time for clients in smaller companies. Grundfos has an active Corporate Social Responsibility program and is acutely aware of the difficulties inexperienced graduate students face in entering the workplace. To help these young people we annually run a 6-month training program centered around the pump industry at which invited students can attend free of charge. To date more than 90 students have attended this program.

Lastly, the facilities of the GZA academy are available for hire at competitive rates. A 48 seat Auditorium, Training Room, Technical Workshop, and Computer lab and onsite catering, make this an ideal venue on the near East Rand for all types of training services. Quotations on request.

Yours in Training

## **Niren Rohanlal**

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## **Course Bookings**

[GZAacademy@grundfos.com](mailto:GZAacademy@grundfos.com)

## **Online Training**

Grundfos Ecademy- [www.grundfos.com](http://www.grundfos.com)



*“The person who wins and achieves success is not always the person with the best exam, but rather the person with the will and faith required to succeed.”*

**POUL DUE JENSEN - FOUNDER OF GRUNDFOS**

# INTRODUCTION

Customer orientation is an important key word at Grundfos. Now and in the future, we constantly focus on our customers' needs and the technical and business value that we can add. One of the best ways to understand our customer is to share knowledge on how we as Grundfos can offer solution for their pumping requirement across various segments. The entire program is developed keeping this in mind.

## **This program will help the participants:**

- To be aware about Grundfos products and solutions.
- Share their knowledge and experience with co participants
- To be aware of emerging technologies in pump industry
- To be aware and share best practices



# LIST OF PROGRAMMES

| Code | Segment         | Course Name  | Duration               |                        |                         |                   |
|------|-----------------|--|------------------------|------------------------|-------------------------|-------------------|
|      |                 |  | Consultants /Designers | Authorities /End Users | Contractors /Installers | Business Partners |
| 101  | BASICS          | Basic Pump Theory  | 4 Days                 | 4 Days                 | 4 Days                  | 4 Days            |
|      |                 | Grundfos Product Center  | 1 hour                 | 1 hour                 | 1 hour                  | 1 hour            |
| 301  | WATER UTILITY   | Borehole Submersible Pumps   | 1 Day                  | 1 Day                  | 1 Day                   | 1 Day             |
| 401  |                 | Solar Pumps & Systems  | 1 Day                  | 1 Day                  | 1 Day                   | 1 Day             |
|      |                 | High Pressure Pumps For Water Treatment                                |                        |                        |                         |                   |
| 501  |                 | Large Water Supply Pumps   | 1 Day                  | 1 Day                  | 1 Day                   | 1 Day             |
| 601  |                 | Wastewater - Buildings   |                        |                        |                         |                   |
|      |                 | Wastewater & Stormwater - Infrastructure                               |                        |                        |                         |                   |
|      |                 | Wastewater Treatment   |                        |                        |                         |                   |
| 701  | FIRE            | NFPA20 - What Makes A Fire Pump  | 1 Day                  | 1 Day                  | 1 Day                   | 1 Day             |
|      |                 | Fire Systems   |                        |                        |                         |                   |
|      |                 | Fire Application Calculation   |                        |                        |                         |                   |
| 801  | BOOSTERS        | Multistage Pumps for Industry & Building Services                      | 1 Day                  | 1 Day                  | 1 Day                   | 1 Day             |
| 901  |                 | Grundfos Booster portfolio (In General)                                | 2 Days                 | 2 Days                 | 2 Days                  | 2 Days            |
|      |                 | Transfer, Filling & Boosting Application                               |                        |                        |                         |                   |
|      |                 | Energy Efficiency & System Selection                                   |                        |                        |                         |                   |
|      |                 | How & Why To Choose Grundfos Boosting Systems                          |                        |                        |                         |                   |
| 110  | iSOLUTIONS      | Controls For Wastewater Systems  | 1 Day                  | 1 Day                  | 1 Day                   | 1 Day             |
|      |                 | Controls For HVAC Systems  |                        |                        |                         |                   |
|      |                 | Pump & Motor Protection  |                        |                        |                         |                   |
|      |                 | Remote Systems Monitoring  |                        |                        |                         |                   |
|      |                 | Variable Frequency Drives In Pumping Systems                           |                        |                        |                         |                   |
| 120  | DOMESTIC        | Circulation Pumps For Hot & Cold Water                                 | 1 Day                  | 1 Day                  | 1 Day                   | 1 Day             |
|      |                 | Domestic Lifting Stations & Drainage pumps                             |                        |                        |                         |                   |
|      |                 | Domestic water Supply/pressure Boosting                                |                        |                        |                         |                   |
| 130  | WATER TREATMENT | Digital Dosing vs. Conventional Dosing                                 | 1 Day                  | 1 Day                  | 1 Day                   | 1 Day             |
|      |                 | Various Disinfection Methods (Basics)                                  |                        |                        |                         |                   |
|      |                 | Municipal Water and Wastewater Treatment D&D Applications and Products |                        |                        |                         |                   |
|      |                 | Industry - D&D Applications and Products                               |                        |                        |                         |                   |

# BASIC PUMP THEORY (101)

This training program is designed to share knowledge of basics on pumps and pumping systems aimed at both experienced and new people within the industry.

## Course Headlines

- The Centrifugal Pump
- Information To Select A Pump
- The Essential Parameters
- Pump Characteristic Curves
- Affinity Laws
- Adjusting Pump Performance
- Cavitation & NPSH
- Selecting The Right Pump

# GRUNDFOS PRODUCT CENTER (201)

This training program is designed to share knowledge on the Grundfos selection software suite - The Grundfos Product Center.

## Course Headlines

- Introduction To The Software
- Basic & Advanced Sizing
- Downloading Information & Technical Literature
- Downloading Dimensional Drawings & CAD Information
- Replacing Existing Pumps & Retrofitting Building

# BOREHOLE SUBMERSIBLE PUMPS (301)

Aim of the course is to share the knowledge about Grundfos range of borehole submersible pumps and systems including motor protection, advanced controls and monitoring. This course will help the participants to be aware of recent developments in borehole pumping application.

## Course Headlines

- Pump Construction
- Range
- Features and Benefits
- Variants
- Factors to be considered while selection
- Application
- Accessories-Electrical & Mechanical
- Selection\*

*\*Only for longer version of the course*

# SOLAR PUMPS AND SYSTEMS (401)

Aim of the course is to share the knowledge about Grundfos range of solar pumps and systems covering both surface-mounted and submersible pumps. This course will help the participants to be aware of recent developments in solar pumping application.

## Course Headlines

- Pump Construction
- Range
- Features and Benefits
- Variants
- Factors to be considered while selection
- Accessories-Electrical & Mechanical
- Selection\*

*\*Only for longer version of the course*

# LARGE-SCALE WATER SUPPLY (501)

Aim of the course is to share the knowledge about Grundfos range of Large split case pumps and Vertical Turbine pumps for water supply application.

## Course Headlines

- Pump construction
- Features and Benefits
- Range
- Variants
- Factors to be considered for selection\*

*\*Only for longer version of the course*

# WASTEWATER IN BUILDING SERVICES (601)

This training program is designed to share knowledge with people working day to day on wastewater application on commercial buildings and provide information on product and application areas. This course will help the participants to be familiar with the product range, features and benefits for trouble free application.

## Course Headlines

- Wastewater application across buildings (High-rise, Hotels, Hospitals, etc.)
- Range of products offered by Grundfos for WW in buildings, Features and Benefits
- Product variants available (eg. Different material, protection and control possibilities.)
- Selection (information on Tools, documents and support available)- only for partners.
- Products covered - SE/SL, SEG, DPK/DWK, EF/DP, Lifting stations, etc..



# WASTEWATER IN INFRASTRUCTURE

This training program is designed to share knowledge with people working day to day on wastewater transport & Treatment projects and provide information on key product features and updates. This course will help the participants to understand the key features, benefits and supports offered by Grundfos for project business.

## Course Headlines

- Wastewater application across Infrastructure (sewage and stormwater)
- Range of products offered by Grundfos, Features and Benefits
- Product variants available (eg. Different material, protection and control possibilities.)
- Selection (information on Tools, documents and support available)
- Products covered - SE/SL ( S-tube), S, KPL/KWM, Mixers & Flowmakers, Aeration, etc..

# WASTEWATER TREATMENT

This training program is designed to share knowledge with people working day to day on Wastewater Treatment projects and provide information on key product features and updates. This course will help the participants to understand the key features, benefits and supports offered by Grundfos for project business.

## Course Headlines

- Application across Wastewater treatment.
- Range of products offered by Grundfos, Features and Benefits
- Product variants available (eg. Different material, protection and control possibilities.)
- Selection (information on Tools, documents and support available)
- Products covered - SE/SL ( S-tube), S, Mixers & Flowmakers, Aeration, etc..

# FIRE SYSTEMS (701)

This training program is designed to share knowledge on the Grundfos Fire pumps.

## Course Headlines

- Introduction To Grundfos fire system
- Horizontal Split case pumps
- Vertical Turbine pumps
- Vertical Inline pumps

# NFPA 20-WHAT MAKES A FIRE PUMP

This training program is designed to cover the basics of NFPA 20 stationary fire pumps. This course will help the participants to be familiar with the NFPA 20 recommendation in selecting the Fire pumps and its components.

## Course Headlines

- International Fire Standards
- Scope of NFPA 20
- Types of Fire Pumps by Standard
- Factory and Field Performance of Fire pumps
- Pump Sizing
- Component and accessories
- Factory acceptance test

# FIRE APPLICATION CALCULATION

This training program is designed to share knowledge on the application calculations needed to consider when designing a Fire system

## Course Headlines

- Exhaust sizing
- Engine Selection/Derate
- Pump Room Ventilation
- Cooling Loop Size Calculation

# MULTISTAGE PUMPS FOR INDUSTRY & BUILDING SERVICES (801)

Aim of the course is to share the knowledge about Grundfos centrifugal vertical Multistage pumps including the pump range, design aspects, solutions, efficiency, sales arguments and success criteria of Grundfos pumps in pressure boosting application. This course will help the participants to be aware of recent developments in reliable & efficient pumping and pump selection in building services and industrial applications.

## Course Headlines

- Range
- Features and Benefits
- Variants
- Efficiency
- Cost of ownership
- Customized solutions
- Multistage Pump failure statistics
- Shaft seal features
- Different types of shaft seal arrangements
- Different applications
- Environmental aspects

# GRUNDFOS BOOSTER PORTFOLIO (IN GENERAL) (901)

Aim of the course is to share the knowledge about Grundfos Hydro Boosters in building services and water supply with focus on basic features and differences. This course will help the participants to be aware of the complete offer from Grundfos and in understanding the functionality of different sets and in making proper selection.

## Course Headlines

- Fixed speed and Variable speed pumping
- Features - Multi-S Booster
- Features – Hydro 1000 Boosters
- Features – Multi-E Boosters
- Basic Features – Hydro MPC Boosters
- Hydro MPC S, F and E
- Overview of Booster set lines by type and features.

# HYDRO BOOSTING APPLICATIONS

Aim of the course is to share the knowledge about Grundfos Hydro Boosters in building services and water supply with focus on various applications. This course will help the participants to be aware of the complete offer from Grundfos and in understanding the selection by different application.

## Course Headlines

- Consumption and load profile.
- Roof top versus pressurized systems.
- Booster system design.
- Life cycle cost comparison in different systems.
- Pros and Cons of single Booster system.
- Pros and Cons of Zone divided system.
- Pros and Cons of series connected system.
- Pressure Boosting application

# ENERGY EFFICIENCY & SYSTEM SELECTION IN BOOSTERS

Aim of the course is to share the knowledge about Grundfos Hydro Boosters in building services and water supply with focus on energy savings. This course will help the participants to be aware of the concept of energy efficiency in theory and by examples and help them understand the importance and benefits of choosing energy efficient pumping systems..

## Course Headlines

- Energy savings within pumping operations.
- Why speed control pumps.
- Speed control theory and curves.
- Grundfos E-Pump program
- Grundfos Blueflux & Efficiencies
- Driving down cost of ownership
- Life cycle cost calculation.

# HOW & WHY TO CHOOSE GRUNDFOS BOOSTING SYSTEMS

Aim of the course is to share the knowledge about Grundfos Hydro Boosters in building services and water supply with focus sales arguments and the uniqueness of a Grundfos booster system. This course will help the participants to be aware of the overall offer of boosting systems from Grundfos and in understanding the criteria for selection of the most appropriate pumping system for the required application.

## Course Headlines

- Wide range of products.
- Energy efficiency.
- Advanced and unique functionality of Booster controller.
- Advanced monitoring functions.
- Pump audit.
- Taking booster sets to new heights.
- Grundfos product range.

# ISOLUTIONS (110)

Aim of the course is to share the knowledge about Grundfos wastewater controls systems including motor protection, advanced controls and monitoring. This course will help the participants to be aware of recent developments in reliable & efficient wastewater control systems.

## Course Headlines

- Range
- Features and Benefits
- Simple WW controls for 1 or 2 pump operation via float switches
- Advanced WW & storm water controls for pumping stations up to 6 pumps
- Variable speed operation
- Variants
- Factors to be considered while selection
- Application
- Selection\*

## MOTOR PROTECTION IN PUMPING SYSTEMS

Aim of the course is to share the knowledge about Grundfos Motor protection systems including provision for remote monitoring. This course will help the participants to be aware of recent developments in reliable & efficient operation of pump motors.

## Course Headlines

- Features and Benefits
- Variants
- Factors to be considered while selection
- Application
- Selection\*

*\*Only for longer versions of the course*

## REMOTE MANAGEMENT OF PUMPING SYSTEMS

Aim of the course is to share the knowledge about Grundfos data communication options & remote monitoring. This course will help the participants to be aware of recent developments in reliable & efficient operation of pumping systems.

## Course Headlines

- Types of data communications
- Features and Benefits
- Application

# VARIABLE FREQUENCY DRIVES IN PUMPING SYSTEMS

Aim of the course is to share the knowledge about Grundfos variable frequency drives provision for remote monitoring. This course will help the participants to be aware of recent developments in reliable & efficient operation of pump motors.

## Course Headlines

- Features and Benefits
- Variants
- Factors to be considered while selection
- Application
- Accessories
- Recommendations in variable speed operation
- Selection\*

*\*Only for longer version of the course*

# DOMESTIC BUILDING SERVICES (120)

Aim of the course is to share the knowledge about Grundfos range of circulators for heating and water circulation applications. This course will help the participants to be aware of the product range.

## Course Headlines

- Product range
- Features and Benefits
- Applications
- Sales Arguments
- Selection Process

# DRAINAGE PUMPS AND LIFTING STATIONS

Aim of the course is to share the knowledge about Grundfos range of circulators for heating and water circulation applications. This course will help the participants to be aware of the product rang

## Course Headlines

- Product range
- Features and Benefits
- Applications
- Sales Arguments
- Selection Process

# BOOSTING PUMPS

Aim of the course is to share the knowledge about Grundfos range of pressure Boosting and Drainage pumps for domestic application. This course will help the participants to be aware of the product portfolio in details

## Course Headlines

- Product range
- Features and Benefits
- Applications
- Selection Process

# DIGITAL DOSING VS. CONVENTIONAL DOSING (130)

Aim of the course is to share the knowledge about Grundfos range of Dosing Pumps. This course will help the participants of the latest development of chemical dosing pumps with focus on Digital Dosing as the technology trendsetter of chemical dosing.

## Course Headlines

- Dosing pump basics
- Comparison between Digital Dosing and conventional dosing technology
- Product overview
- Features, Benefits and Advantages
- Dosing pump and accessories selection basics

# VARIOUS DISINFECTION METHODS (Basics)

Aim of the course is to share basic knowledge about various disinfection methods. Unfortunately there is no “perfect” disinfection method. This course will help to understand the advantages and disadvantages of the different methods related to different applications.

## Course Headlines

- Disinfection basics
- Various disinfection principles
- Comparison of methods: Effectiveness, Investment and Operational cost, etc.
- Application basics and market trends

# MUNICIPAL WATER & WASTE WATER TREATMENT – DOSING & DISINFECTION APPLICATIONS AND PRODUCTS

Aim of the course is to share the knowledge about Dosing & Disinfection products within potable water and waste water applications. This course will help the participants to be aware of common chemical dosing and disinfection methods within various treatment processes. Current challenges and trends will be addressed in this course.

## **Course Headlines**

Application overview

Disinfection methods overview

Chemical dosing pumps

Grundfos range

# INDUSTRY - DOSING & DISINFECTION APPLICATIONS AND PRODUCTS

Aim of the course is to share the knowledge about Dosing & Disinfection products within industrial applications. This course will help the participants to be aware of chemical dosing within selected processes within industry as well as industrial water and wastewater disinfection methods.

## **Course Headlines**

- Membrane filtration (RO, UF,..)
- Cooling towers
- Boiler feed
- Pulp & Paper
- Food & Beverage
- Power plants
- Petrochemical, Oil, Gas & Mining
- Others...



# FEBRUARY 2019

| Sunday | Monday | Tuesday | Wednesday  | Thursday                                  | Friday | Saturday |
|--------|--------|---------|--|---|--------|----------|
| 27     |        |         |  |   | 1      | 2        |
| 3      | 4      | 5       | 6  | 7   | 8      | 9        |
| 10     | 11     | 12      | 13   | 14  | 15     | 16       |
| 17     | 18     | 19      | 20<br>Isolutions - Controls<br>& Monitoring<br><i>Full Day</i> | 21<br>Wastewater Pumps<br><i>Full day</i> | 22     | 23       |
| 24     | 25     | 26      | 27   | 28  |        |          |

# MARCH 2019

| Sunday | Monday | Tuesday | Wednesday  | Thursday   | Friday   | Saturday |
|--------|--------|---------|--|--|--|----------|
|        |        |         |  |  | 1  | 2        |
| 3      | 4      | 5       | 6<br>NK/NB/TP - Single<br>Stage Pumps<br><i>Full Day</i>         | 7<br>Hydro Booster<br>Systems<br><i>Full Day</i> | 8<br>Hydro Booster<br>Systems<br><i>Full Day</i> | 9        |
| 10     | 11     | 12      | 13<br>Water treatment -<br>Dosing & Disinfect<br><i>Full Day</i> | 14   | 15   | 16       |
| 17     | 18     | 19      | 20   | 21<br>Human Rights Day                           | 22   | 23       |
| 24     | 25     | 26      | 27   | 28   | 29   | 30       |
| 31     |        |         |  |  |  |          |

# APRIL 2019

| Sunday | Monday           | Tuesday     | Wednesday    | Thursday  | Friday            | Saturday |
|--------|------------------|-------------|--------------|---|-------------------|----------|
|        | 1                | 2           | 3            | 4<br>CR/CM/MT/MTR -<br>Multistage Pumps<br>Full Day | 5                 | 6        |
| 7      | 13<br>0<br>0     | 9<br>0<br>0 | 10<br>0<br>0 | 11<br>0<br>0  | 12                | 13       |
| 14     | 15               | 16          | 17           | 18  | 19<br>Good Friday | 20       |
| 21     | 23<br>Family Day | 24          | 25           | 26  | 27<br>Freedom Day | 28       |
| 29     | 30               |             |              |   |                   |          |

# MAY 2019

| Sunday | Monday   | Tuesday  | Wednesday                                      | Thursday                                       | Friday | Saturday |
|--------|--|--|--|--|--------|----------|
| 28     |  |  | 1<br>Workers Day                               | 2  | 3      | 4        |
| 5      | 6  | 7  | 8  | 9<br>Wastewater Pumps<br>Full Day              | 10     | 11       |
| 12     | 13<br>Basic Pump<br>Hydraulics *<br>Cost - TBA | 14<br>Basic Pump<br>Hydraulics *<br>Cost - TBA | 15<br>Basic Pump<br>Hydraulics *<br>Cost - TBA | 16<br>Basic Pump<br>Hydraulics *<br>Cost - TBA | 17     | 18       |
| 19     | 20   | 21   | 22   | 23   | 24     | 25       |
| 26     | 27   | 28   | 29   | 30   | 31     |          |

# JUNE 2019

| Sunday          | Monday               | Tuesday | Wednesday | Thursday  | Friday | Saturday |
|-----------------|----------------------|---------|-----------|---|--------|----------|
|                 |                      |         |           |   |        | 1        |
| 2               | 3                    | 4       | 5         | 6<br>Water treatment -<br>Dos & Disinfection<br><i>Full Day</i> | 7      | 8        |
| 9               | 10                   | 11      | 12        | 13<br>NK/NB/TP - Single<br>stage Pumps<br><i>Full Day</i>       | 14     | 15       |
| 16<br>Youth Day | 17<br>Public Holiday | 18      | 19        | 20  | 21     | 22       |
| 23              | 24                   | 25      | 26        | 27  | 28     | 29       |
| 30              |                      |         |           |   |        |          |

# JULY 2019

| Sunday | Monday | Tuesday | Wednesday | Thursday   | Friday | Saturday |
|--------|--------|---------|-----------|--|--------|----------|
|        | 1      | 2       | 3         | 4<br>CR/CM/MT/MTR -<br>Multistage Pumps<br><i>Full Day</i> | 5      | 6        |
| 7      | 8      | 9       | 10        | 11   | 12     | 13       |
| 14     | 15     | 16      | 17        | 18   | 19     | 20       |
| 21     | 22     | 23      | 24        | 25   | 26     | 27       |
| 28     | 29     | 30      | 31        |  |        |          |

# AUGUST 2019

| Sunday | Monday | Tuesday | Wednesday                                      | Thursday | Friday          | Saturday |
|--------|--------|---------|--|----------|-----------------|----------|
|        |        |         |  | 1        | 2               | 3        |
| 4      | 5      | 6       | 7<br>HS/LS Split case pumps<br><i>Full day</i> | 8        | 9<br>Womens Day | 10       |
| 11     | 12     | 13      | 14   | 15       | 16              | 17       |
| 18     | 19     | 20      | 21   | 22       | 23              | 24       |
| 25     | 26     | 27      | 28   | 29       | 30              | 31       |

# SEPTEMBER 2019

| Sunday | Monday | Tuesday            | Wednesday  | Thursday   | Friday | Saturday |
|--------|--------|--------------------|--|--|--------|----------|
| 1      | 2      | 3                  | 4  | 5<br>Isolutions - Controls & Monitoring<br><i>Full Day</i> | 6      | 7        |
| 8      | 9      | 10                 | 11<br>CR/CM/MT/MTR - Multistage Pumps<br><i>Full Day</i> | 12   | 13     | 14       |
| 15     | 16     | 17                 | 18   | 19   | 20     | 21       |
| 22     | 23     | 24<br>Heritage Day | 25   | 26   | 27     | 28       |
| 29     | 30     |                    |  |  |        |          |

# OCTOBER 2019

| Sunday | Monday  | Tuesday  | Wednesday  | Thursday   | Friday | Saturday |
|--------|---|--|--|--|--------|----------|
|        |   | 1  | 2  | 3  | 4      | 5        |
| 6      | 7<br>Water Treatment -<br>Dos & Disinfection<br><i>Full day</i> | 8  | 9  | 10   | 11     | 12       |
| 13     | 14<br>Basic Pump<br>Hydraulics*<br><i>Cost - TBA</i>            | 15<br>Basic Pump<br>Hydraulics*<br><i>Cost - TBA</i> | 16<br>Basic Pump<br>Hydraulics*<br><i>Cost - TBA</i> | 17<br>Basic Pump<br>Hydraulics*<br><i>Cost - TBA</i> | 18     | 19       |
| 20     | 21  | 22   | 23   | 24   | 25     | 26       |
| 27     | 28  | 29   | 30   | 31   |        |          |

# NOVEMBER 2019

| Sunday | Monday  | Tuesday   | Wednesday  | Thursday   | Friday   | Saturday |
|--------|---|---|--|--|--|----------|
|        |   |   |  |  | 1  | 2        |
| 3      | 4<br>Renewable &<br>Borehole Pumps<br><i>Full day</i> | 5<br>Renewable &<br>Borehole Pumps<br><i>Full day</i> | 6<br>HS/LS Split case<br>pumps/Bulk Water<br><i>Full day</i> | 7<br>Hydro Booster<br>Systems<br><i>Full Day</i> | 8<br>Hydro Booster<br>Systems<br><i>Full Day</i> | 9        |
| 10     | 11  | 12  | 13   | 14<br>Wastewater Pumps<br><i>Full Day</i>        | 15   | 16       |
| 17     | 18  | 19  | 20   | 21   | 22   | 23       |
| 24     | 25  | 26  | 27   | 28   | 29   | 30       |