

VIRTUAL COURSE

# PUMP SYSTEMS

## FUNDAMENTALS & ENERGY REDUCTION

18 AUGUST 2021 – 6 OCTOBER 2021

PRESENTER: DR MARTIN ATKINS, WAIKATO UNIVERSITY

Appita 

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**18 August 2021 – 6 October 2021**

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Registration closes Friday 6 August 2021

**Pump Systems – Fundamentals and Energy Reduction** is a mid-level course consisting of online modules aimed at providing an overview of fundamental principles and methods to improve the efficiency and reduce energy consumption of pump systems.

The course consists of 10 modules, 4 real time workshops and a final assessment. Each module video is 20-25 minutes in duration and is designed to review pump system fundamentals and apply them to real life applications. You can view the online modules any time prior to each workshop.

- Multi-week Course
- Online Modules: 4-5 hours
- Virtual Facilitated Workshops: 4 hours

### Who Should Attend?

This course is will be valuable to those who need a broad understanding of pumps and pump systems including plant engineers, technical, maintenance, and operational staff who design, operate and maintain pump systems.

### What You Will Learn

- The importance of pump systems in the industry.
- Understand the common information found on pump curves.
- To understand how to select and specify the correct pump for applications.
- Understand and calculate the impact to life cycle costings of oversizing pumps.
- To understand issues with operating under off-design conditions.
- Understand main flow control methods.
- The importance of screening pump systems
- Applications and limitations of the pump affinity laws.
- Pump Impellor Trimming.
- Understand the situations where variable speed drives may be an option.

### Course Presenter



#### **Dr Martin Atkins, Waikato University**

Dr Martin Atkins is a Senior Lecturer in Chemical and Process Engineering at the School of Engineering at the University of Waikato. His general field of research is in energy systems engineering with a particular focus on developing and using Process Integration methodologies for optimising industrial energy systems and emissions reduction.

## Course Requirements

Participants will be required to review online modules prior to attending each workshop by accessing the modules on the Appita website – via your course login.

Zoom Meetings and Microsoft Teams are the main technology platforms used for this course. Zoom Meetings will be used for interactive workshops and Microsoft Teams will be used as the course collaboration hub so that participants can interact with the trainer and other course attendees throughout the course.

## Course Schedule

MODULE	DETAILS
0	<b>18 Aug 2021: Course Induction &amp; Access to Modules 1 - 2</b> 12:30 pm – 1:00 pm AEST / 2:30 pm to - 3:00 pm NZST
1	Introduction – Why pump systems matter?
2	Pump Curves and System Curves
	<b>25 Aug 2021: Workshop 1 – Application of Modules 1 - 2</b> 12:30 pm – 1:45 pm AEST / 2:30 pm to - 3:45 pm NZST
	<b>27 Aug 2021 - Access to Modules 3 - 5</b>
3	System Requirements & Pump Selection
4	How to Avoid Pump Oversizing
5	Off-design Operation
	<b>8 Sept 2021: Workshop 2 - Application of Modules 3 - 5</b> 12:30 pm – 1:45 pm AEST / 2:30 pm to - 3:45 pm NZST
	<b>10 Sep 2021 - Access to Modules 6 - 7</b>
6	Pump Flow Control Methods
7	Pump Systems Assessment for Energy Reduction
	<b>22 Sept 2021: Workshop 3 - Application of Modules 6 - 7</b> 12:30 pm – 1:45 pm AEST / 2:30 pm to - 3:45 pm NZST
	<b>24 Sept 2021 - Access to Modules 8 - 10</b>
8	Affinity Laws
9	Impellor Trimming
10	Variable Speed Drives for Energy Reduction
	<b>6 Oct 2021: Workshop 4 - Application of Modules 8 - 10 &amp; Course Close</b> 12:30 pm – 1:45 pm AEST / 2:30 pm to - 3:45 pm NZST

## Registration Fees

Member: \$800 + gst

Non-Member: \$1100 + gst

### Groups of 3 or more: Contact the Appita Office.

Member: \$700 + gst

Non-Member: \$1000 + gst

[Click here](#) to register.

### Contact Appita

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