

Training & education

Bespoke training lays foundations for a bright future

The pump industry can only be as good as the people who work within it. As a result, training is of critical importance to ensure engineering excellence and product innovation continue to provide the optimum solutions for applications all over the world. Andrew Smith reports on how some of the best and most promising engineers study for qualifications on a bespoke training course which recently celebrated its 10th anniversary.

The significance of pumps in industry cannot be underestimated. There is a saying that in the chemical industry one pump is installed per employee so as well as being essential components, they also incur a significant cost.

As a result, it is vital that the correct pump systems are selected for the



Felix Kleinert, managing director of Netzsch.

particular application to ensure peak efficiency and cost-effectiveness. Designing and operating that system also requires both theoretical knowledge and practical ability which is where the Pump.Ing course comes in.

In short, it provides pump experts with the knowledge and expertise that could previously only have been built up with years of experience on the job.

Ten years ago, Pump.Ing was established by professors of the Graz University of Technology, the Berlin University of Technology and the Erlangen University together with former employees of BASF.

In the form of an Open University study programme, Pump.Ing provides knowledge on the design and operation of pumps by offering theoretical basics as well as specific processing and plant-related knowledge for various industries.

Operated by the dedicated organisation, Pumpenfachingenieur GmbH, it is made up of 50 training days, including eight

attendance periods (Fridays and Saturdays) for the German course or two attendance periods (two weeks each) in the English programme in Austria and Germany, with a range of modules and sub-modules having to be passed. Hydraulic and mechanical basics as well as practical knowledge in the fields of control, operation and maintenance, trouble shooting and analysis of damages are taught.

Participants carry out the course through self-study with lecturers available via an e-platform. Once exams are passed, graduates are awarded with a certificate and the title pump engineer or pump technician, depending on the level of the individual at the beginning of the programme. Recently, the new title, certified energy consultant for pumps and pump systems, has also been introduced. The entire course lasts for about 14 months.

The Pumpenfachingenieur GmbH board consists of pump experts with both an operating and manufacturing

background as well as professors with significant experience in related industries. Its members assume an advisory function in the definition of course modules' contents and ensure the quality of the curriculum.

The lecturers and trainers are leading Austrian, German and Swiss pump experts with many years of experience in plant development and/or pump operation. Thanks to co-operation with the research and development divisions of leading industrial players as well as scientists, lecturers are at the cutting edge of technology.

More than 200 participants – manufacturers, operators and planners – have been trained to become pump engineers and pump technicians in the last decade. Since 2012 the Pump.ing programme has also been offered as an English language study course, expanding its reach globally.

"The topics cover a large amount of my daily work."

Volker Hähnel, an employee in the energy and technology division of the TÜV SÜD Industrie Service GmbH, took the course in 2008-09.

"Being an inspection engineer I check pumps in large-scale power plants for conformity to safety regulations. Looking at the contents of the study programme, I realized the topics cover a large amount of my daily work, ranging from my office tasks up to on-site duties," he said.

Mr Hähnel studied 25 different subjects – each with a written exam – as well as eight two-day attendance periods in both Germany and Austria. Having already had 20 years' experience in the industry with six different companies, he found the study comprehensible as well as relevant, although the course is time consuming.

"An average workload of five to 10 hours per week plus exam periods should be expected. Preparations for the final exams were quite intensive and I even



Installation of a multi-stage pump provided as practical training. Various types of rotary and displacement pumps are disassembled down to the smallest detail and then reassembled.



Pump assembly at Graz Technical University.



Students from across the world study on the courses.

had to take some of the exams during business trips, which took some organisation.

"The important thing is to be able to apply expert knowledge in my everyday work. The pump engineer occupies a privileged position as this qualification is less familiar but highly appreciated. With a degree in pump engineering the possibilities of acquiring new customers and to work on new tasks have increased considerably.

"Now it is much easier for me to be on a par in professional discussions with customers, plant operators and pump manufacturers. For me as an individual as well as my employer, the pump engineer programme was a very good decision."

From an employer's perspective, the advantages of the course are clear. Progressive cavity pump specialist Netzsch put 11 workers from its affiliates in Australia, Brazil, Dubai, Italy, Thailand, Singapore, South Africa and the United States on the third international English language pump engineer course.

"We send our technicians, product designers and site people on these courses," said managing director Felix Kleinert

"We provide basic training using a global e-learning system and there are 500 people signed up to that. The very best, most promising people are then assigned to these courses."

Netzsch sends staff on the course every two years. "It is a big investment, but we

are investors in people," added Mr Kleinert. "And we are convinced we will see the return, even though it is difficult to measure."

As well as attending classes in Austria employees also visit manufacturing sites, most recently in Germany, to gain hands-on practical experience.

"There is a lot of homework as well but the beauty of it is that there is team building and they learn together. It is not just about bringing your knowledge up, it is about having fun and enjoying the experience together," added Mr Kleinert.

Most of the employees attending the course are young people but one recent attendee from Netzsch was 58.

"We don't differentiate on age. If an engineer is successful and shows an interest then we will support them," said Mr Kleinert.

With Netzsch making such a big commitment to the course, Mr Kleinert is keen to ensure that once the training has been completed, the company can receive maximum benefit from its participants.

"We give them an opportunity to develop their career and critically we pay them properly as we don't want to lose them. There is a big demand for pump engineers and we believe the overall message is 'people, people, people'.

"We take on those who want to do a good job and provide them with knowledge. But the key to success is commitment. Growth, innovation and profitability are always down to having the right people."

The next English Pump Engineer programme starts this month (March 2015) followed by the German course in July. There are still places on both courses available – for details see the website www.pump-engineer.org ●

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