

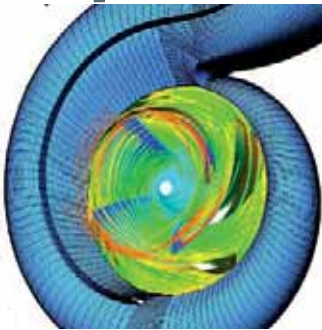
# professional education



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# pump ing.

The Pump-Engineer



In recent years, large-scale restructuring of the big players in industries such as chemical and procedural and the focussing of corporate activities on relevant core competences have led to the outsourcing of maintenance and service to special service pools and/or external companies. In particular, accurate operation of pump aggregates is of highest importance, as pump failures repeatedly lead to expensive system and machine downtimes. As a result of the permanent further development of maintenance strategies from fixed revision cycles to condition-related maintenance, the significance of condition analysis with the help of up-to-date measurement techniques is growing rapidly. However, in order to be able to correctly evaluate the operational and maintenance state of a pump, quite high levels of technical knowledge as well as operational experience are required, which actually cannot but be acquired by means of many years of practical work in industrial entities. Hence, the call for "pump experts" became louder and louder.

These experts shall have fundamental knowledge as well as specific knowledge on processes and plant systems for the different fields of industry. On the one hand, a study programme providing such knowledge should reduce the periods of vocational adjustment of new employees in production plants, on the other hand, a reliable quality certificate for service companies shall be developed as a basis for the selection and ranking of service providers. For plant designers, too, an intensified study programme on pumps makes sense in order to avoid plant failures caused by design errors in the first place.

Having these requirements in mind, the Conference for Pump Practitioners – Pumps in process engineering – in Graz and at the same time the pump section of the German Association of the chemical industry VCI considered to form the study programme in staff

## The Pump-Engineer

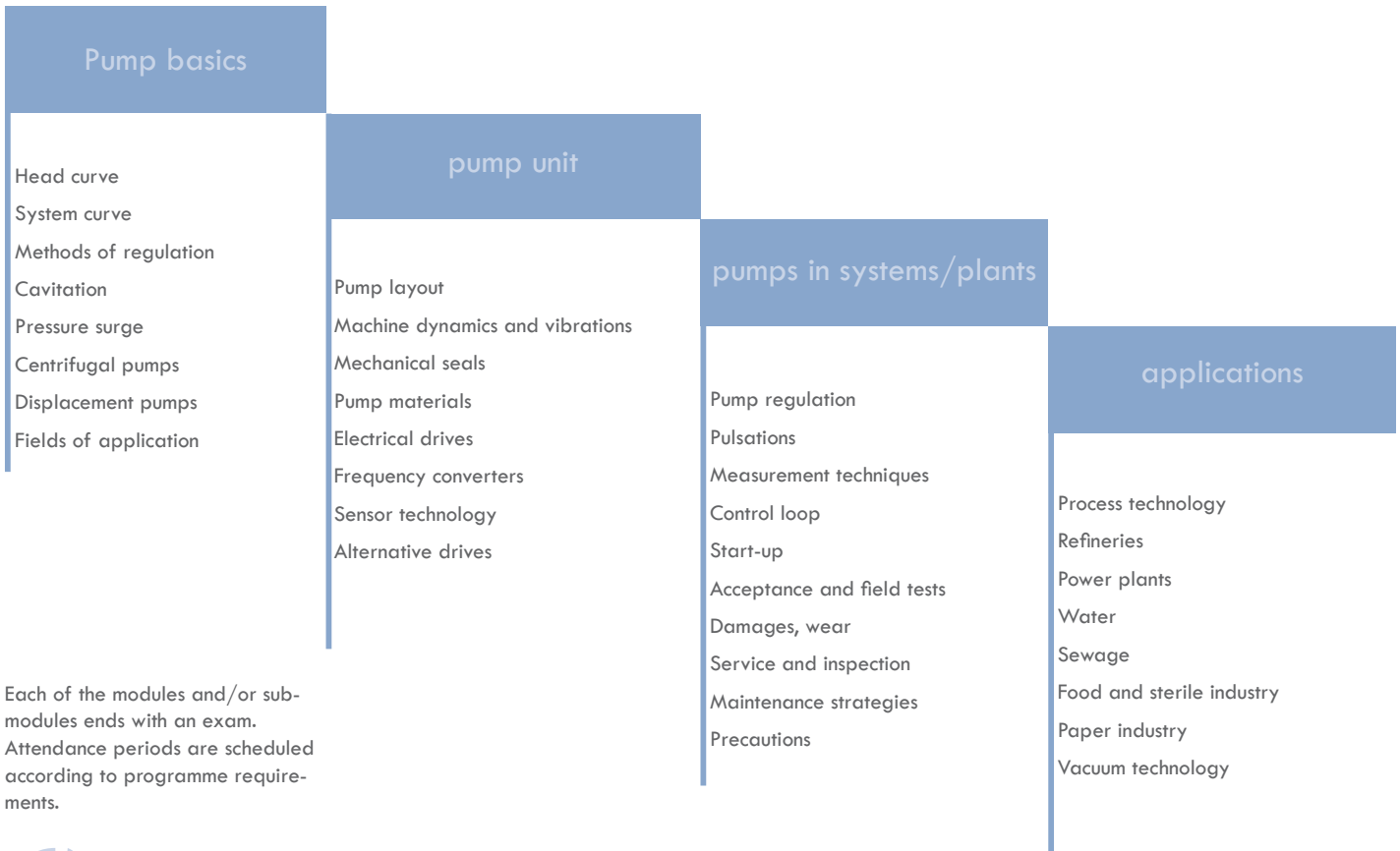
development "Pump engineer" respectively "Pump technician" (depending on the level of professional qualification a participant presents at the beginning of the programme).

In order to achieve the targets of the study programme – a high-quality training aiming at the formation of pump experts with an internationally renowned quality label – a broad basis of knowledge in the field of pumps with the relevant technical and scientific background has to be provided. Thereby, the focus of the programme has to lie on industrial practice with pumps, in order to achieve the necessary acceptance on the part of the industries. Hydraulic and mechanical basics as well as practical knowledge in the fields of control, operation and maintenance, trouble shooting and analysis of pumps' state and damages are taught. The sub-module „Standards and Legislation“ as well as „Market and Branch“ complete the programme. Finally, non-permitted operation modes and pump damages resulting out of them can be experienced in a sort of "live performance" through laboratory exercises on especially designed research and test rigs. Thus, existing practical knowledge is consolidated and the participants are sensitised with regard to improper pump operation.

Consolidation of the programme is achieved by means of branch-related modules which can be freely selected and combined. The programme corresponds to a time equivalent of 400 hrs and is split into modules and sub-modules, some of which are obligatory and have to be passed by each of the participants whereas some of the sub-modules can be freely selected. Target group for the study programme are all persons whose jobs are related to pumps.

The English Pump engineer programme starts every year in March.

Duration: 1 Year



schedule

## Top qualification for you and your employees

- Free time management
- Practical relevance through cooperation with industrial partners
- Renowned experts with industrial background as lecturers

# modular

## Pump basics:

- Hydraulic basics
- Pump media
- Layouts, types and selection of pumps

## Pump unit:

- General layout
- Machine dynamics and vibrations
- Materials
- Drives

## Pumps in systems/plants:

- Regulation and safeguarding
- Pump operation
- Service and inspection
- Maintenance and damages

## Planning, various fields of application:

- Process engineering
- Refineries
- Power plants
- Water
- Sewage
- Food and sterile industry
- Paper industry
- Vacuum technology

## Standards and legislation

## Market and branch

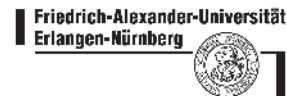
## Exercises/Hands-on training:

- Practice-oriented selection of pumps
- Evaluation of damages
- Operation of centrifugal pumps in systems
- Installation
- Impeller calculation

# practical

# module contents

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