

## Training Design principles for precision engineering

This training starts on: 17-06-2019

**Location:** Eindhoven  
**Price:** 2.495,00 euro excl. VAT  
**Duration:** 5 consecutive days  
**Contact:** training@hightechinstitute.nl, +31 85 401 3600

### Overview

The training focuses on the fundamental principles concerning the behaviour of mechanisms and how this behaviour can be predicted and improved. The learning goal is that after the training the participants are able to recognise, identify and evaluate the fundamental aspects concerning the behaviour of mechanical designs.

Ir. Huub Janssen is leading this course. Read the interview with this lecturer:

- 'Niet alleen college, maar ook veel interactie' (Dutch)
- 'Not just lectures, but also lots of interaction' (English)

Also, read the article about how Design Principles became Design Principles for Precision Engineering:

- Design Principles blijft stevig verankerd in gedachtegoed Wim van der Hoek (Dutch)
- Design Principles course still firmly anchored in Wim van der Hoek's ideology (English)

### Intended for

This course is intended for all engineers involved in mechanical, mechatronic and system design who want to be able to recognise and analyse mechanisms with a predictable and reproductive behaviour. It is recommended that participants already have a Bachelor or Master education in mechanical engineering, mechatronics, physics, or equivalent practical experience.

### Programme

In 5 days of training the following topics are treated:

- The role of stiffness and compliance in mechanisms and how to evaluate these mechanisms
- Controlling 'Degrees Of Freedom'
- Optimal use of elastic elements
- Friction, hysteresis and micro slip
- Real and virtual play
- How to realise damping
- Balancing of manipulators

The training material originally has been developed by Prof. Ir. W. van der Hoek (Philips and TU Eindhoven from 1962 till 1984) and Prof. Dr. Ir. M.R. Koster (Philips, TU Eindhoven and TU Twente from 1984 till 2008).

During the course many hand models are presented helping to explain the fundamental theory behind the subjects. Continuity It was Prof. Ir. W. van der Hoek who started to build an approach for designing mechanisms in such a way that the behaviour of these mechanisms could be predicted without the need for complex calculations. He developed and taught this approach at the Centre For Technology of the Philips Company and at the Mechanical Engineering Department of the Technical University of Eindhoven and succeeded in inspiring a whole generation of mechanical engineers. It has been and still is our intention to achieve continuity in the training of engineers in this approach.

Information is subject to change. Please contact High Tech Institute for the latest course information and time schedule.

### Partner

### Certified by

Euspen

### Certification

There is no formal exam and consequently the participants receive a certificate of participation. The training is set up as a workshop with exercises during which the participants can show whether they master the concepts or whether some additional explanation is required.

This course is certified by the European society for precision engineering & nanotechnology (euspen) and the Dutch Society for Precision Engineering (DSPE) and leads to the ECP2-certificate.

### Course leaders

Ir. Huub Janssen  
Dr.ir. Adrian Rankers

### Teachers

Ir. Huub Janssen  
Dr.ir. Chris Werner  
Dr.ir. Roger Hamelinck  
Ir. Piet van Rens  
Prof. Dr. ir. Dannis Brouwer  
Dr. ir. Kees Verbaan

### Timetable

17-06-2019 | 09:00 - 17:00  
18-06-2019 | 09:00 - 17:00  
19-06-2019 | 09:00 - 17:00  
20-06-2019 | 09:00 - 17:00  
21-06-2019 | 09:00 - 17:00