

How to handle?

The modules for teachers and trainers in vocational education and training (VET) give an introduction into working world 4.0 with a focus on the fields of mechatronics, electronics and IT. The basic idea is to orientate the acquisition of competences along process chains as it is necessary in a networked and digitalized production.

Like the students the teachers or trainers are forced to individual learning and to combine self-learning with learning in a group. The modules are closely related to the modules for students. Teachers and trainers have to partly retrace by themselves the learning processes which they expect from their students and thus recognize difficulties and challenges. This enables them to adapt and further develop the existing modules with close regard to their own learning group.

The modules offer important background information, e.g. competence matrices 4.0 for teachers and students, supporting forms as well as didactical notes, sample solutions and useful links. A short overview on the particular modules you will find under “basic questions”.

Objectives

- Teacher or trainer is able to implement the students’ learning module with his/her own students.
- Teacher or trainer is able to consider the gained insights for future learning and teaching with digital media.
- Teacher or trainer is able to analyse the module with regard to learning and teaching.
He/she can appraise to which extent the example is suitable for his/her students and where adjustments are necessary.
- Teacher or trainer is able to practically implement the module and to arrange own 4.0 learning settings.
He/she is able to recognize the expected learning achievements.
- Teacher or trainer is able to use the module in order to increasingly implement digital elements in the class.
- Teacher or trainer is able to appraise how further digital learning modules can be implemented in his/her school.
- Teacher or trainer is able to further develop the existing module respectively to develop new modules in this field.



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Learning Modules for Teachers and Trainers

General Module

This module gives an introduction to basic aspects of a digitalized world with fully automated production. It also broaches the issue of possible societal consequences.

Internet of Things – Plant Irrigation

A networked and automated system has been developed at the example of plant irrigation. It also can be controlled by an application which is useful e.g. if you are in holidays. Teachers learn how to implement this by cheap devices and how to organize the learning process of their students.

Intelligent House 4.0 – Smart Light Control

An Intelligent House 4.0 comprises several fields. The issue of this module is to install and integrate smart light control into existing smart home systems. It can easily be adapted to other fields, e.g. smart security control.

Smart and Keen Factory – My Trolley Chip

Rapid product development offers a broad range of applications. A product chain with networked components produces a trolley chip. The devices have been designed and assembled by using a 3D printer. The whole process is explained and can be varied and adapted in this module.

Digital Factory for Individualized Mass Products

The production of a customer-oriented mass product includes, from the point of view of production, several areas. The present learning module is subdivided in five section, which is intended to represent the closed process chain of a parameterized product. The product, as a learning support, must be designed customer-oriented as a 3D model. Here, the focus is on the individualization of the product. From this, all further production-related data can be derived (rapid prototyping, CNC and CAM programs), which can be used to manufacture the product. Thus, another focus is on the level of data processing. The concept and various examples can be used as a basis for planning.



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