



Fit for the future - thanks to modern, practice-oriented training

Investments in technical training and science are the prerequisite for economic growth and wealth creation. The future can only be moulded by the trained hands and minds of qualified scientists, engineers, technicians and skilled workers.

With innovative experimenting and training systems we ensure the preconditions for an excellent education that focuses on high-quality qualifications and hands-on skills. That's how theory can be transferred into everyday on-the-job applications.

#### Your advantages:

- Technology-oriented education
- Highly skilled specialists for industry, science and research
- Brief effective training



Automation Technology Industry 4.0

### Technical progress has a great influence on education

Modern smart factories involve the meshing of production processes with the latest information and communications technology. This makes it possible to manufacture tailormade products that match the customers' needs at inexpensive prices and in high quality. This concept is predicated on data acquisition pertaining to the status of the production system and the closed-loop control of process variables. This is accomplished using a wide variety of sensors that operate according to different physical principles. Knowledge of sensor systems is therefore essential for anyone dealing with automation or closed-loop control technology as well as for mechatronics technicians.

operating and monitoring equipment.

Changing demands call for new, modern, practice**oriented** training systems. These systems instruct trainees on the most up-to-date technology and provide them with the requisite skills.

Strong **partnership** with industry is the guarantee for close proximity to actual practice. Lucas-Nülle has found this strong partner in the market leader, Siemens AG. State-of-the-art products in automation engineering from **Siemens** are prepared by **Lucas-Nülle** for educational purposes and precisely tailored to the needs of schools and educational institutions. All areas and study levels are fully covered from the basic compact version up to and including modular high-end systems with fieldbus interfaces and decentralized peripherals including

It goes without saying that the latest security and safety technology in accordance with the latest European engineering guidelines has been integrated into all of the systems.

The modular and scalable vocational training systems are both innovative and future-proof and thus form the foundation for excellent and indepth training in automation technology.





# Industry for the laboratory

- Working on the same training system from the start to finish
- Increasing degree of difficulty as training progresses
- Individualised equipment configuration to fit your lessons
- The appropriate LabSoft course in digital form for each equipment configuration



#### One system - many possibilities

In the basic equipment set of the smart factory (Industry 4.0), many variants of a product can be customized. By adding the MES and ERP systems to the equipment set, this system excels by ultimately demonstrating the difference to Industry 3.0.

#### From subsystem to industrial production line

In the area of vocational and advanced training, it can be a long and painful process to start with a complex production line. This is avoided by our modular system with its eight individual, standalone stations that can be connected up and networked together with the ERP lab to make up a smart factory.

#### **Extension options**

Thanks to its modularity, the system can be expanded to meet any needs in a flexible manner. Whether the system is meant to cooperate with an automated vehicle system (AVS), integrated into an Augmented Reality (AR) environment or used with a smart manual workstation to boost the number of product versions, there is no limit to the system's complexity.



Industry 4.0 understand!



## REAL EXPERIENCE LEARNING

# Training systems for skilled workers, technicians and engineers

Power Engineering Smart Grid | Micro Grid





Technology | IT





Technology | Hybrid/ Electric Vehicle







Microcomputers

Energies





Transformers

Power Electronics

Instrumentation





Lab Systems









EloTrain -Plug-in System



REAL EXPERIENCE LEARNING -Experiential learning with a kick

REAL EXPERIENCE LEARNING, a learning method that optimally prepares learners for the job market. Because it makes possible tasks and problem scenarios tangible in advance through physical interaction. Instead of just working through them in theory. Experiential learning with a kick engages the senses and triggers emotion.

The Lucas-Nülle company provides premium training systems and laboratories for technical training and engineering studies which combine theoretical background information and practical applications in an innovative way.

Which pays off in the end, because it efficiently boosts skills and capability. For the learners, this means: more work routine and fewer errors at the workplace. Combined with our E-Learning systems, Real Experience Learning ensures that all course participants will enjoy the same shared sense of achievement.

- Computer-assisted training and experimentation systems
- E-learning courses including animations
- Training systems with industrial components
- Administration, customization, testing and evaluation with the Classroom Manager







# LN EDUCATION GROUP BUNDLED EDUCATION INNOVATION

The companies of the LN EDUCATION GROUP see themselves as international accelerators of education projects. LUCAS-NÜLLE and PHYWE have accordingly made a commitment to sustainable development goals. With our forward-looking educational programme, we are striving in the education market to make a fundamental contribution to successfully implementing the global sustainable development goals of the 2030 Agenda.

To this end, we are drawing on our respective strengths, expertise and synergies in the global education market. Our collaboration enables us to develop pioneering innovations in the education sector and simultaneously cater to the megatrends and technological developments in this era of digital transformation.







# PHYWE solution systems for natural sciences

- Everything you need from the biggest product range on the natural science market
- Conforming to your syllabus in all natural science subjects based on the International Cambridge Curriculum
- Making future-oriented and sustainable investments in a modern, internationally top-class education system
- PHYWE is taking the lead on new learning scenarios such as Instruction 4.0
- Total, precision solutions with cleverly designed student and demonstration experiments, modern measurement technology, experimentation literature and a comprehensive pre-sales and after-sales service











