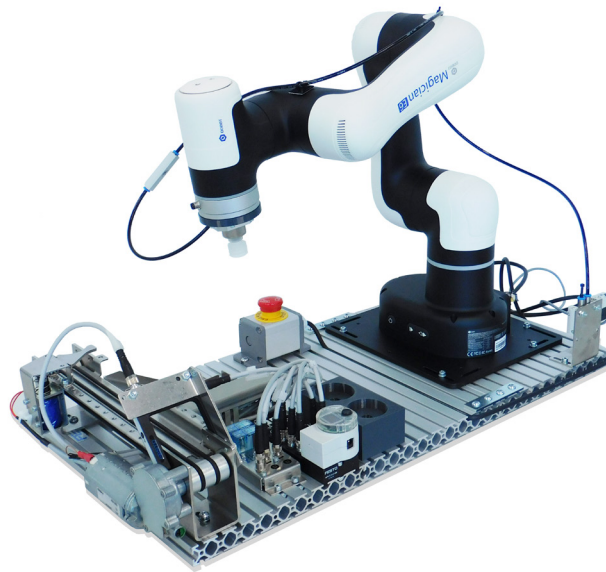# Enhance Mechatronics Education
with MecLab, FluidSIM, and a New Cobot

FESTO

Ideal for STEM

Highlights

- Real-world automation experience with a 6-axis collaborative robot
- Compatible with the three MecLab stations
- Toolkit included
- Simplified wiring
- Online simulation software

MecLab is a proven learning solution for teaching mechatronics to beginners through real-world industrial applications. A new optional collaborative robot (cobot) now further expands learning possibilities to take your students' automation skills to the next level.

Problem-Solving in Action

Beyond the excitement of working with cutting-edge technology, cobots **make learning interactive and meaningful**. By applying concepts from multiple disciplines, students deepen their **understanding of complex systems** while developing essential skills for modern manufacturing. Engaging in realistic optimization and system integration tasks, and receiving instant feedback, **keeps students motivated, fueling creativity and critical thinking**.

The addition of a cobot to the MecLab learning system enables the **exploration of supplementary topics**, such as:

- Human-robot collaboration
- Applications of cobots
- Integration with automated systems
- Robot programming
- Multi-axis motion control
- Cobot commisionning, maintenance, and troubleshooting
- Data analytics
- System optimization

The cobot is displayed alongside the conveyor belt station, seamlessly connected to FluidSIM through the EasyPort device.

A Powerful, Versatile Learning Playground

MecLab **introduces beginners to automation** by helping them understand control systems and the basics of pneumatics, electrical actuators, sensors, and controllers. Students **learn to plan, develop, and build automated production systems** using programming and simulation tools.

MecLab stations simulate real production processes:
- The stacking magazine station stores, feeds, and presses the workpieces.
- The conveyor station transports and sorts the workpieces.
- The handling station moves and assembles the workpieces.

Stations can work as standalone or combined to create more complex production lines.

Students can use FluidSIM simulation software to visualize how various components interact within a system. It allows them to design and test pneumatic and electric circuits, as well as programmable controllers. Additionally, FluidSIM can control MecLab stations.

MecLab's open architecture allows for easy integration of a cobot to expand learning opportunities.

The **MecLab Robot Station features the DOBOT Magician E6**, a desktop grade 6-axis cobot designed for education and scientific research. It can work as a standalone system or connect to other MecLab stations through its 16 digital I/Os. Students can program the robot using Blockly or Scripting using the **free programming software** available on the manufacturer's website.

The MecLab robot station also includes profile plates, a workpiece holder, a parallel and suction gripper, two valves, and other accessories. Curriculum is currently in development.
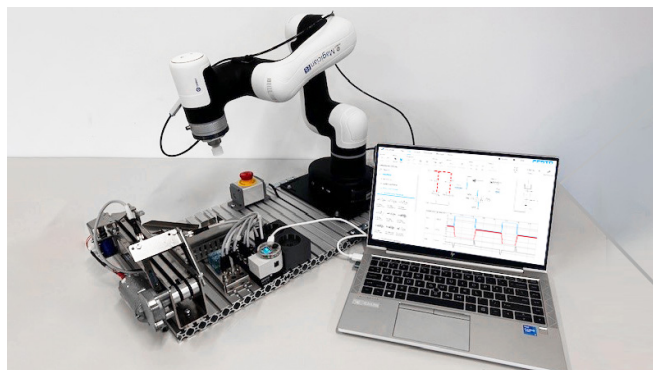
Flexible Options to Suit Your Needs
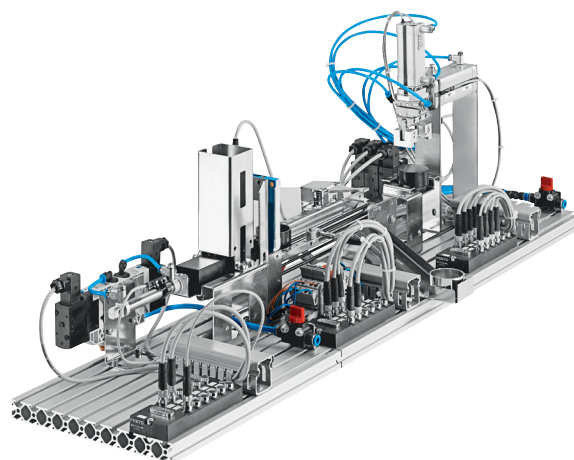
- The **MecLab package** includes the three stations, a compressor, three EasyPort PC interfaces, power supplies, accessories and tools, an extension kit, and storage containers. It also includes a license for FluidSIM 6 MecLab.
- The **MecLab Plus package** builds on the MecLab package by adding the MecLab robot station.
- The **MecLab Ultra package** further expands the MecLab Plus package, including a one-year subscription to the web-based simulation software FluidSIM 365 for up to 18 users.

Current MecLab owners can purchase the new cobot and/or a FluidSIM 365 MecLab license to expand their learning system.

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Ready to learn more?
Please contact Festo Didactic or an authorized dealer to confirm product availability, pricing, and technical specifications.