Title: Fabrication laboratory

FEEIT FabLab features advanced digital fabrication infrastructure, including a CNC milling machine, PCB router, 3D printers, and a high-precision CO2 laser cutter. This equipment supports hands-on prototyping and innovation in areas such as electronics, mechanical design, and product development. The FabLab provides an accessible environment for startups, researchers, and industry to turn ideas into functional prototypes.

Infrastructure / Equipment Overview Table

	Details
Partner	Faculty of Electrical Engineering and Information Technologies
Equipment type	Fabrication laboratory
Target Group	Startups, industry companies and researchers
Key Technology	3D printing, CNC, Laser cutting
Status	Available to use
Requirements for Participation	Relevant project or need, basic technical knowledge

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Description of Available Infrastructure and Equipment

At FEEIT FabLab, a state-of-the-art environment for innovation and hands-on learning through precision tools and high-end fabrication systems. The facility supports startups, researchers, and industry collaborators in transforming concepts into working prototypes.

The FabLab houses a range of advanced equipment tailored to meet diverse technological and creative needs. A key highlight is the JLAB7121 CNC milling machine, engineered for high-precision machining of complex geometries from raw materials. Ideal for mechanical components, it enables high-resolution prototyping with a user-friendly interface. Complementing it is a CNC router, which specializes in detailed fabrication of printed circuit boards, making it a vital tool for electronics prototyping. For digital manufacturing, the lab features 3D printers—the Creality Ender V3 and XC-F PRO—delivering high-quality additive manufacturing capabilities. These printers are perfect for producing accurate, durable prototypes for applications ranging

from mechanical parts to artistic models. Another vital asset is the CO2 laser cutter (RK-6090-PRO), equipped with a 600x900 mm working area, up to 130W power, and a cutting accuracy of ≤0.01 mm. It supports materials of up to 20 mm in thickness and includes software like Rdworks, industrial cooling (CW5000 chiller), air assist, and ventilation for high-efficiency operation.

Each piece of equipment is selected not only for its technical sophistication but also for its versatility in application. The CNC milling machine allows for subtractive manufacturing in metals and plastics, supporting mechanical engineering and robotics development. The 3D printers provide rapid prototyping in PLA and other materials, supporting design iteration, biomedical modeling, and functional testing. The CNC PCB router enables streamlined development of custom electronics, vital for embedded system projects. Meanwhile, the CO2 laser cutter, with its precision engraving and cutting abilities, caters to a wide range of tasks—from architectural models and signage to enclosures and product packaging. Its automatic focusing, red-dot positioning, and high-speed engraving (up to 1000 mm/s) make it a key tool for both prototyping and small-series production.

By integrating these capabilities into one cohesive environment, FEEIT FabLab offers a complete ecosystem for innovation—from initial idea to tested prototype. Whether used for academic research, industrial collaboration, or innovation challenges, the infrastructure is designed to accelerate creativity and technical excellence.


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