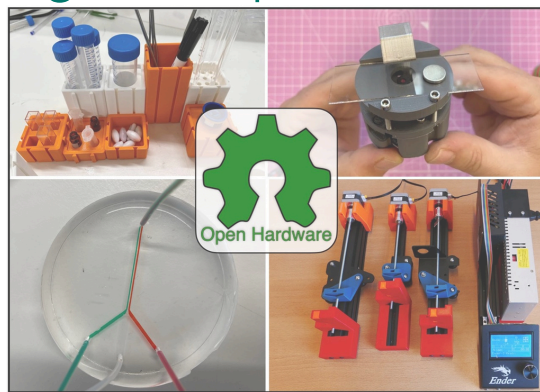


COURSE

Open Hardware in the lab: DIY using 3D printers, laser cutters and CNC

3, 7 and 14 February 2025
Wageningen Campus, the Netherlands



BACKGROUND COURSE

Research often requires custom setups and tools for proper functioning, and existing products are not always suited or optimized for the individual research project. Luckily, the rise of computer-aided manufacturing techniques has made it easier than ever to quickly design objects specifically designed for your intended use. 3D printing, laser cutting, and CNC milling are manufacturing techniques that make it possible to go from an idea to a physical object within a day. These techniques have become relatively affordable and accessible. More importantly designs can easily be shared and reproduced by other researchers, making them an essential tool for Open Science and Open Hardware. Using these techniques for your own research can make experiments faster, easier, and more affordable, while increasing the impact of your research.

PROGRAMME TOPICS

The course is conducted in two full days and one half day over two weeks. Part of the course hours will be devoted to theoretical lectures to understand the operation, materials, and theory for each of the manufacturing devices. The remaining part of the course will be conducted in the laboratory and focused on the use of 3D printers, laser cutter, and the CNC. Between the theoretical and practical lectures, students will receive mandatory assignments regarding the design of objects that can be prepared with the available devices.

PARTICIPANTS

This course is designed for PhDs from different backgrounds without any previous experience in the design and use of manufacturing instruments or PhDs who want to gain more autonomy and confidence in using these tools.

ABOUT THE COURSE

This course will teach participants how to use 3D printing, laser cutting, and CNC milling for use in their research. In the course, participants will familiarize themselves with the steps from idea to manufactured object. For this, there will be a lecture about each of the three techniques, focusing on how the methods work, and pros and cons of each one of them. This will be followed by tutorials on how to use the required software for 3D design, making sketches, and slicing programs, and how to optimize a design for the relevant manufacturing method. Participants will design and produce a custom object for all three techniques to take them through the entire process. This will give the participants a basis to apply this skill to their research projects afterward.

COURSE LECTURERS

Dr. Vittorio Saggiomo, BioNanoTechnology, Wageningen University & Research

Dr. Sander Baas, BioNanoTechnology, Wageningen University & Research

COURSE FEES

Affiliation	Early Bird Fee **	Regular Fee
VLAG and other WU PhD candidates	€200	€250
Other PhD candidates, VLAG postdocs	€425	€475
All other academic staff and participants from non-profit organisations	€575	€625
Participants of for-profit organisations	€1000	€1050

