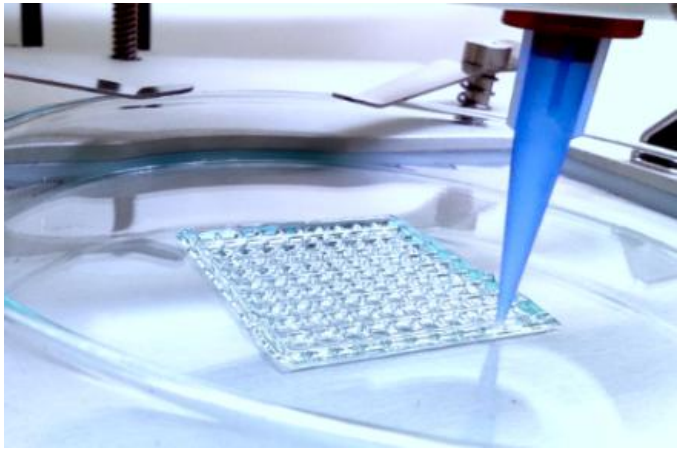
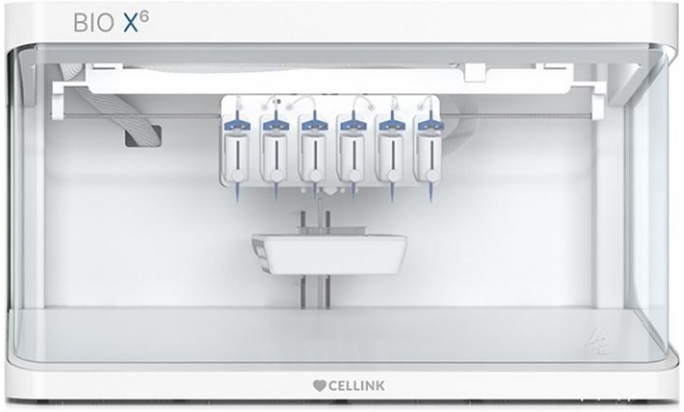


Learning objectives

You are going to …

- … learn about the most important **3D printing processes**
- … be able to independently **create and edit 3D models** using software
- … be able to operate extrusion-based printers and **optimize the essential process parameters**
- … be able to **select suitable bioinks** for various application scenarios
- … understand the interaction of **process and material parameters** for successful 3D printing



CCLP

UNIVERSITÄT DUISBURG ESSEN
Offen im Denken

Workshop

for

students and scientists

3D printing in medicine and biomedical research

pti

Ministerium für Wirtschaft, Industrie, Klimaschutz und Energie des Landes Nordrhein-Westfalen

Agenda

Day 1 – 07.05.2026
Room SA-111 (Schützenbahn 70, 45127 Essen)

09:00 **Welcome at the CCLP**

09:15 **Introduction to 3D-Printing**
- Overview of 3D printing technologies (FDM, SLA, SLS, PJ)
- Areas of application for 3D printing in industry and (medical) research

10:00 **Lab Tour in the CCLP**
- 3D printers in action

11:00 **Overview of CAD design and print preparation**
- 3D model databases, slicing software, GCODE
- First steps in Fusion 360
- Hands-on: Printing with Material Extrusion Technology

12:00 **Bioprinting**
- Definition, processes, examples, challenges
- Biocompatible materials & relevant Bioinks

12:30 **End**

Day 2 – 08.05.2026
Meeting at UK Essen (exact room to be announced)

09:00 **Reflection of Day 1 & open questions**

09:15 **Bioprinting hands-on**
- Working with CELLINK BioX6 bioprinter
- Available accessories & print heads
- Joint test planning and preparation for the entire process
- Discussion of challenges (cell survival rate, sterility, printing accuracy)
- Selection of suitable bioinks (GelMA, alginates, collagens, GelMA C, GelXA,CELLINK alginate/cellulose, etc.) and cell cultures

12:00 **Final Discussion & open questions**

12:30 **End**

Information & Details

The two-day workshop is being held by the **Co-Creation Lab Product Innovations (CCLP)** at the University of Duisburg-Essen.

It is aimed at students and researchers in **medicine and biology** who are interested in bioprinting and 3d printing.

The exact content can be found in the schedule.

Day 1: Meeting at Room SA-111 (Schützenbahn 70, 45127 Essen)

Day 2: Takes place at the UK Essen. Exact room to be announced.

Contact person: adrian.haag@uni-due.de
Website of the CCLP: https://udue.de/cclp/

CCLP
Co-Creation Lab
Produktinnovationen
Universität Duisburg-Essen
Schützenbahn 70 | 45127 Essen | SA-035
udue.de/cclp | cclp@uni-due.de