



# European Project Semester

## PROJECT OUTLINE

**Project dates:** Mars – June 2026

**Title:** Co-Design and Build the UTTOP Maker Space: Physical Space + Digital Tools for Community

**Project activity areas:** Physical space design, web development, 3D visualization, community management tools, participatory design methodology

**Keywords:** Maker Space, Fab Lab, Digital Twin, Web Application, 3D Visualization, Community Tools, Co-construction

### Tutor's name and coordinates

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### Project origin

UTTOP-DPI: This maker space project aims to establish a collaborative fabrication space for students, researchers, staff, and local partners.

### Project technical background:

UTTOP is launching a **maker space / fab lab** to support innovation, prototyping, and hands-on learning on campus. The project has two phases:

- **Phase 1** (February 2026): Open a temporary space (~50-80m<sup>2</sup>) in a renovated chemistry classroom
- **Phase 2** (2028-2029): Migrate to a permanent 200-250m<sup>2</sup> space in the renovated RENAPA building

**Activity Domains:** Metalworking, woodworking, digital fabrication (3D printing, laser cutting, CNC), electronics/software, Digital projects, DIY projects...

**The Challenge:** Physical Space + Digital Infrastructure

Traditional maker spaces focus on **physical infrastructure** (equipment, safety rules, access control). However, a successful and sustainable maker space also needs **digital tools** to support community collaboration, knowledge sharing, and long-term operation.



This project addresses **both dimensions**:

### 1. Physical Space Design

- **Space organization:** Design functional zones (ideation area, technical workshops, storage)
- **Equipment layout:** Position machines for safety, workflow efficiency, and collaboration
- **Safety & governance:** Refine access rules, training requirements, and certifications
- **Visual identity:** Create signage, wayfinding, and branding for the space

## 2. Digital Tools for the Community

To support the maker community, students will develop web-based tools :

### 2-a) 3D Virtual Space

- Interactive 3D model of the physical space (using existing laser scan data)
- Web-based floor plan showing equipment locations and availability
- Virtual tour for orientation, onboarding new members, and campus open house (JPO 2026)

### 2-b) Community Management Tools

- Project showcase: Web application to document and share maker projects
- Member profiles: Skills database to facilitate collaboration and mentorship
- Knowledge base: Searchable wiki with equipment guides, tutorials, safety procedures
- Booking system: Reserve equipment and track space usage

## 3. Participatory Design Approach

This project uses a **co-construction methodology**: students will not design "for" users, but **with** them. The EPS team will:

- Interview future maker space users (students, teachers...)
- Organize design workshops to gather requirements
- Test prototypes with real community members
- Iterate based on feedback
- Ensure the final system meets actual needs

## Studied topics:

**Phase 1: Discovery & Requirements (3 weeks)**

**Phase 2: Physical Space Design (4 weeks)**

**Phase 3: 3D Visualization Tools (4 weeks)**

**Phase 4: Community Management Tools (4 weeks)**

**Phase 5: Testing & Handover (3 weeks)**

## Collaboration Opportunities

The project welcomes contributions from other UTTOP students.