



SUMMARIZING

*KEY POINTS OF THE THREE
TECHNOLOGIES SELECTED*

3D PRINTING, 3D SCANNERS AND CNC



WHAT IS EACH TECHNOLOGY USED FOR?



3D PRINTING

- Rapid prototyping
- Iterative learning
- From digital to physical object

3D SCANNING

- Digitalization of real objects
- Basic reverse engineering
- Design and dimensional control support

CNC

- Precise manufacturing
- Working with real materials
- Environment close to industrial conditions

+ Info

Useful technologies for blending the digital and innovative with the art of craftsmanship





Here you will find the guides in all languages



Library

ShiftVET is more than a training project - it's a replicable model where tradition and innovation go hand in hand. By connecting trainers,...



3D PRINTING

CAD design
↓
Laminating
↓
Printing
↓
Post-processing



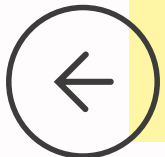
3D SCANNING

Preparation
↓
Scanning
↓
Mesh cleaning
↓
Export



CNC

CAD design
↓
CAM
↓
Configuration
↓
Machining





Teacher

- Basic technical knowledge
- Active supervision skills

Resources

- Specific software
- Calibrated equipment
- Planned time

Organization

- Guided work
- Small groups
- Clear rules of use



Level of classroom demand by technology

Aspect	3D Printing	3D Scanning	CNC
Teacher supervision	Medium	Medium	High
Technical setup	Medium	Low	High
Safety requirements	Medium	Low	High
Time planning	Medium	Medium	High





3D SCANNING- Low risk

- Clear space
- Secured cables and tripods
- Correct use of light source

3D PRINTING- Medium risk

- Adequate ventilation
- Caution with hot surfaces
- Safe handling of filament

- Mandatory PPE
- Eye and hearing protection
- Never operate without supervision

CNC- High risk



SUSTAINABILITY AND BEST PRACTICES



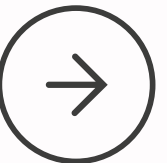
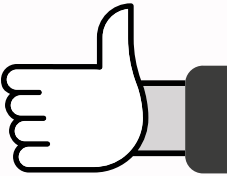
Efficient use of materials

Reuse and waste reduction

Process optimization

Digitization to minimize errors

Culture of responsible maintenance





Digital and technical skills



Critical thinking



Problem solving



Collaborative work



Applied creativity



Safety and sustainability awareness





Which action is essential before starting a 3D printing session?

Touch the nozzle to check temperature

Ensure proper ventilation

Print without supervision

Change filament while printing

What is the main safety concern during 3D scanning in the classroom?

Trip hazards and light source misuse

Sharp cutting tools

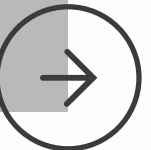
Excessive noise

High temperatures





True or False: Students can operate CNC machines independently once trained.





Digital manufacturing in VET enables learning by doing, connecting the classroom with the professional world through safe, sustainable, and technologically relevant processes. The guides developed in the **ShiftVET** Project support teachers in the effective integration of these technologies into vocational training.

**FROM DESIGN TO REALITY ⇒ SKILLS
THAT ARE MANUFACTURED**





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