

3D Printer
Installation and how to use
Course Outline

SOLIDXPERTS
by solidxperience

ENSURE YOUR SUCCESS IN 3D DESIGN WITH SOLIDWORKS

3D PRINTER - TRAINING INDEX

Markforged (Installation) – 1 Day *77*
Design for Additive Manufacturing (DFAM) – 1 Day *78*

Course Objectives: At the end of the course, the student will know the capabilities of the software and will be able to use the learned features.
Training Course: Training is given in class at SolidXperts or online where each student has access to a workstation or to an online version.
Methodology: Training is based on case studies demonstrated by the instructor. At the end of each lesson, time will be given for exercises.
Competences Evaluation: During the class work, the instructor will correct the exercises on demand and explain the solutions to the entire class if needed.
Instructor: SolidXperts trainers are Certified SolidWorks Instructors (CSWI) and authorized by Emplois Québec.
Course Materials: One or more training manuals are included with the training course.
Attestation: A certificate will be given to the student at the end of the course to attest the successful completion of the requirements for the course.

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Markforged (Installation) – 1 Day

1. Preparation

- Unboxing
- Verifying Boxes Content
- Printer Installation
- Plugging the Printer on the Network

2. Introduction

- SolidXperts Introduction
- Good Use of 3D Printing
- Comparison Against ABS
- Useful Web Pages
- Eiger Account Creation
- Introduction to STL files

3. Maintenance and Calibration

- 3D Printer Components
- The Use of USB Key
- Leveling Technic
- Fiber Nozzle Adjustment
- Test Prints
- Nozzle Cleaning
- Plastic and Fiber Nozzle Replacement
- Wet Plastic Purge
- XY Adjustment
- Strap Tensioning

4. Informations

- Part Glue
- Print Information
- Mechanical Properties

5. Advance Operations

- Menu Options
- Fiber / Sandwich Technic
- Type of Fiber Filling
- Part View and Internal View
- Visibility Options
- Completely Filling a Part of Fiber
- Completely Filling a Part of Plastic
- Helping the Fiber Pathing by Changing the Geometry
- Helping the Fiber Pathing by Changing the orientation of the Part
- Brim
- Opening a Request to MarkForged
- Saving the Logs

6. Questions

- Questions
- Starting a Print with a Custom Part

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Design for Additive Manufacturing (DFAM) – 1 Day

1. What is additive manufacturing

- Brief history of additive manufacturing
- Examples of uses

2. Basic principle of technology

- Mechanical operation
- Special features of the FFF process
- (strengths and weaknesses of the technology).

3. Presentation of printing materials

- ABS and PLA
- Onyx
- Continuous fiber

4. Overview of printing software

- Creation of an STL file
- Example of printing software

5. Produce efficiently

- Choose the right orientation
- Limit the use of support material
- Limit weaknesses (sense of impression)
- Limit printing time
- Support behavior

6. Questions to ask yourself before producing a part

- Purpose of manufacture
- Usage environment
- Duration of use
- Number of parts to manufacture
- Technologie available

7. Adaptation of the design according to the type of manufacture and use.

- Machining mode of thinking vs Additive manufacturing

8. Design optimization for FFF additive manufacturing

- Precision and tolerances
- Wall thicknesses
- Minimum dimensions
- Reduce stress
- Chamfer vs rounding
- Limit fragility
- Surface quality
- Cost and manufacturing time

9. Tips for greater durability.

- Wear parts and technology integration.
- Use of purchased parts
- Thread
- Pause while printing

10. Scenarios

- Prototyping
- Tools

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The training offered by SolidXperts emphasizes the skills and concepts essential to your success in the field of 3D design.

By being an authorized SOLIDWORKS training center, SolidXperts offers the highest quality basic and advanced training. Our trainers are certified by Dassault Systèmes SOLIDWORKS Corp. Each training includes a training book and takes place in a room or online where each student has access to a workstation. SolidXperts is also a training center approved by the CPMT on behalf of the Minister of Employment and Social Solidarity. We can therefore issue certificates in accordance with the "Law promoting the development and recognition of workforce skills" (Law of 1%).