

	PBL1	PBL2	PBL3	PBL4	PBL5	PBL6	PBL7	PBL8	PBL9	PBL10	PBL11	PBL12	PBL13	PBL14	PBL15	PBL16	PBL17	PBL18	PBL19	PBL20	PBL21	PBL22	PBL23	PBL24	PBL25	PBL26	PBL27	PBL28	PBL29	PBL30	PBL31	PBL32
skills to be acquired																																

About the 3D printing technologies

Ability to select 3d printing technologies

Ability to recognize technologies build size

Skills to recognize dimensional Accuracy on 3D printing technologies

Capacity to select between conceptual design, embodiment design (form, fit and function) or detailed design

Ability to select 3d printing technologies																			X			X													
Ability to recognize technologies build size	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Skills to recognize dimensional Accuracy on 3D printing technologies							X								X				X	X				X									X		
Capacity to select between conceptual design, embodiment design (form, fit and function) or detailed design							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X									X	

About the 3D printing materials

Ability to select 3d printing materials

Skill to recognize mechanical properties like ease of printing, Visual quality, Max stress, Elongation at break

Skill to recognize mechanical properties like Impact resistance, layer adhesion (isotropy), Heat resistance

Ability to select Part accuracy

Skill to select Surface finish

Skill to select material post processing

Ability to select cold welding procedures

Ability to select 3d printing materials		X															X									X							X	
Skill to recognize mechanical properties like ease of printing, Visual quality, Max stress, Elongation at break		X																																
Skill to recognize mechanical properties like Impact resistance, layer adhesion (isotropy), Heat resistance																			X					X									X	
Ability to select Part accuracy			X		X					X	X		X				X	X	X						X	X		X		X		X		
Skill to select Surface finish																	X	X																X
Skill to select material post processing												X				X	X										X		X		X			
Ability to select cold welding procedures									X	X	X	X				X									X									

About the 3D printing process data

Demonstrated ability to recognize STL, AMF, 3MF, PLY, OBJ input files

Ability to recognize technologies estimation built time

Ability to use STL repairing software, Netfabb, Cura, Simplify3D, Slic3r prusa, Pronterface, Repetier Host, Meshmixer, Meshlab, Magics, Deskartes.

Skill to use slicing software Netfabb, Cura, Simplify3D, Slic3r prusa, Pronterface, Repetier Host, Meshmixer, Meshlab, Magics, Deskartes

Skill to manage Print Quality Troubleshooting Guide

Ability to recognize 3d printing glossary and terminology

Skill to manage closed surfaces/solids

Ability to use platform built simulators

Skill to manage booleans operations, symmetry, scaled, duplicated parts with dedicated software

Ability to programming printing parameters (Hotend diameter, slicing layer, skirt, dual printing, Hotend material selection, supports orientation, infill and form density [11])

Demonstrated ability to recognize STL, AMF, 3MF, PLY, OBJ input files	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ability to recognize technologies estimation built time		X															X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ability to use STL repairing software, Netfabb, Cura, Simplify3D, Slic3r prusa, Pronterface, Repetier Host, Meshmixer, Meshlab, Magics, Deskartes.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Skill to use slicing software Netfabb, Cura, Simplify3D, Slic3r prusa, Pronterface, Repetier Host, Meshmixer, Meshlab, Magics, Deskartes	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Skill to manage Print Quality Troubleshooting Guide	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ability to recognize 3d printing glossary and terminology	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Skill to manage closed surfaces/solids			X							X																								
Ability to use platform built simulators			X							X																								
Skill to manage booleans operations, symmetry, scaled, duplicated parts with dedicated software	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ability to programming printing parameters (Hotend diameter, slicing layer, skirt, dual printing, Hotend material selection, supports orientation, infill and form density [11])						X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

About the 3D printing desktop layout

Ability to recognize technologies build size

Ability to recognize dimensional

Accuracy on 3D printing technologies

Ability to work with network printers or standalone 3

Skill to make 3d printer configurations

Skill to make 3d printer calibration

Attitude to built 3d printed part cost estimation

Attitude to solve print Quality troubleshooting

Skill to change 3d print materials

Ability to recognize technologies build size			X						X	X	X					X	X							X								X			
Ability to recognize dimensional									X							X	X																		
Accuracy on 3D printing technologies																X	X																		
Ability to work with network printers or standalone 3																X	X																		
Skill to make 3d printer configurations	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Skill to make 3d printer calibration																							X	X	X									X	
Attitude to built 3d printed part cost estimation																X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Attitude to solve print Quality troubleshooting																																			
Skill to change 3d print materials																X																			

About the 3D printing post-Processing

Ability to remove supports on printed parts

Ability to clean printed parts

Ability to remove supports on printed parts							X																		X	X		X		X		X		
Ability to clean printed parts							X																					X		X				

Skill to use electric cutting, cleaning parts

Skill to use soluble supports filaments (PVA, HIPS)

Ability to use sanding post Processing

Ability to use painting technique

Ability to use welding technique

Ability to use gluing technique

X

X

X

X

X

X

X

X

X

X

X

X

X

X