

SMFA DIGITAL FABRICATION STUDIO POLICIES

Rooms A212/A210

Contents

Studio Manager	2
Overview	2
Studio Access	2
Staff Support	2
<i>Consultations</i>	2
List of Processes Supported in the Studio	2
List of Equipment	3
Safety Protocols and Hazards	3
<i>Emergency procedure and contact info</i>	3
<i>Personal Protective Equipment (PPE)</i>	3
<i>Safety Data Sheets (SDS)</i>	3
<i>Equipment-specific Safety Protocols and Hazards</i>	4
Laser Cutter –.....	4
CNC Router –.....	4
SLA (resin) 3D Printers –.....	4
Trainings/Certifications	4
Equipment Reservations	4
Equipment issues	5
Materials	5
Storage of materials and work	5
Cleanliness	6
<i>Equipment specific clean-up</i>	6
Laser cutter –.....	6
CNC Router –.....	6
Ultimaker/FDM (plastic spool) 3d printers –.....	6
Formlabs/SLA (resin) 3d printers –.....	6

SMFA DIGITAL FABRICATION STUDIO POLICIES

Rooms A212/A210

Studio Manager

John O'Keefe
j.okeefe@tufts.edu
(617) 627-0040
Office: B012

Overview

The Digital Fabrication Studio (DFS) at SMFA is a studio space that aspires to integrate traditional fine art and craft techniques with emergent technologies and materials. Through additive (3D printing) and subtractive (laser cutting, CNC milling), students are able to transform digital 2D and 3D digital concepts into physical artworks. Interdisciplinary coursework and specialized workshops in the DFS embody SMFA's commitment to collaboration and innovation in the arts.

Studio Access

Hours: 9a-10p, 7 days a week

The studio is closed during class sessions. A class schedule is posted on the door of the studio.

The Digital Fabrication Studio is a high hazard studio. Users are only allowed access while the Studio Manager, a Student Safety Monitor, or trained/certified faculty member is present.

The Digital Fabrication Studio only issues card swipe access to certified faculty and Student Safety Monitors.

Digital Fabrication Studio/equipment access carries over for trained/certified faculty and students from semester to semester.

Staff Support

The safe operation and maintenance of the Digital Fabrication Studio is the primary responsibility of the Studio Manager and Student Safety Monitor.

Consultations

Students and faculty may contact the Studio Manager via email to schedule a project-specific technical consultation. The Studio Manager will discuss the user's project objectives, offer advice on technical planning and execution, and direct the user to relevant studio resources. If the user's objectives appear to exceed their technical ability within the allotted timeline, adjustments to the user's project goals may be recommended.

List of Processes Supported in the Studio

1. Laser cutting
2. Laser etching
3. 2D CNC milling
4. 2.5/3D CNC milling of foam and wood

SMFA DIGITAL FABRICATION STUDIO POLICIES

Rooms A212/A210

5. FDM (plastic spool) 3D printing
6. SLA (resin) 3D printing
7. SLA (resin) 3D print washing and curing

List of Equipment

1. (1) Epilog Fusion M2 28"x40" Laser Cutter
2. (1) Shapeoko XXL 29"x29"x2" CNC Router
3. (3) Ultimaker S7 FDM (plastic spool) 3d Printers (13"x9"x11" build volume)
4. (3) Formlabs Form 3 SLA (resin) printers (5"x5"x7" build volume)
5. (2) Formlabs Form Wash
6. (2) Formlabs Form Cure

Safety Protocols and Hazards

Emergency procedure and contact info

In case of injury, alert the Studio Manager or Student Safety Monitor on duty. We have a first aid kit for minor injuries. If any injury requires more than a band-aid or you are unsure, call TUPD at 617-627-6911

In case of fire, alert the supervisor and move to safety. On the SMFA campus, we report fires directly to 911 before calling TUPD.

Note: You are NOT obligated to fight fires of any size. If you have any doubt, do not attempt to fight the fire.

A halon fire extinguisher and fire blanket are located on the wall to the left of the laser cutter as you face the machine.

Incidents should be reported to the Studio Manager (John O'Keefe), Senior Studio Manager Legs Cowell, and/or other available Studio Manager. In case of fire in the studio: first evacuate the room), or serious bodily injury, call 911.

Personal Protective Equipment (PPE)

Disposable gloves, safety glasses and ear protection are available in the studio. Safety glasses are required for students and faculty using the CNC machine or SLA (resin) printers. Ear protection is recommended for students and faculty either using the CNC or when the CNC is in use. Disposable gloves are required for students handling or cleaning SLA (resin) prints.

Safety Data Sheets (SDS)

The DFS Safety Data Sheet (SDS) binder is located on the rear (southeast) wall of the studio to the right of the SLA (resin) printers.

SMFA DIGITAL FABRICATION STUDIO POLICIES

Rooms A212/A210

Equipment-specific Safety Protocols and Hazards

Laser Cutter –

- The exhaust system must be on and pulling in at least 650 CFM, and the air assist must be on – this is the audible wisp of air pointing at the laser beam, and currently turned on by rotating the yellow valve to the right until it is parallel with the pipe it is on.
- The laser lens must be clean at all times (this is checked by monitors at the start of every shift).
- Only material bought from the DFS may be cut and/or etched on the laser cutter – all other materials must be checked for safety by the Digital Fabrication Studio Manager.
- Students, faculty, and staff must stay with the laser cutter at all times while it is cutting.

CNC Router –

- Safety glasses or over-the-glasses (OTG) safety glasses must be worn at all times by students, faculty, and staff operating the CNC.
- Material must be firmly fastened to the CNC bed and outside of the cutting tool path to minimize the risk of the router bits cutting the fastening hardware/screws.
- Ear protection is recommended. Students, faculty, and staff must stay with the CNC router at all times while it is cutting.

SLA (resin) 3D Printers –

- Safety glasses and surgical gloves must be worn by students, faculty, and staff who are handling, or washing uncured resin prints.

Trainings/Certifications

Each piece of equipment/machine available for use in the Digital Fabrication Studio requires a separate training and certification by either the Studio Manager, trained/certified faculty teaching a class, or trained/certified Studio Team member.

Students, faculty, and staff interested in becoming authorized on a piece of equipment (and ultimately using equipment on their own) in the DFS must take part in a training/certification session. Training/certification dates and times are posted on the door of the DFS/A212 at the beginning of the semester and students/faculty/staff can sign up using the online form.

Equipment Reservations

Once a user is authorized on a piece of equipment, they are certified in WebCheckout to reserve and sign out that equipment. Before using a piece of equipment in the DFS, a user must first reserve it on WebCheckout – even if it is free in that moment – so that others can see that it is in use and plan accordingly. A reservation is considered forfeit if someone is more than 15 minutes late.

SMFA DIGITAL FABRICATION STUDIO POLICIES

Rooms A212/A210

Equipment issues

Certified/authorized students and/or faculty experiencing a problem with equipment in the studio should notify the Student Safety Monitor on duty and/or email the Studio Manager (j.okeefe@tufts.edu) including as much relevant information as possible – machine type, software used, day, time, monitor on duty, if the machine was found in a broken state, if the machine malfunctioned during a job, etc. If a piece of equipment is malfunctioning, cease using it immediately.

Materials

Only materials purchased in the DFS or approved by the Digital Fabrication Studio Manager are allowed in the DFS.

Materials brought in by a user cannot be stored in the DFS.

The following materials are NOT allowed in the Digital Fabrication Studio:

- PVC (Polyvinyl Carbonate)
- Pleather
- Vinyl
- Artificial Leather

Free chipboard, plywood, acrylic, and foam scraps are often available in the DFS but are not stocked. When available, scrap materials are located in clearly marked bins and are first come, first served.

Materials for sale:

- Chipboard
- Cardboard
- Plywood
- Clear acrylic
- PLA 3d printing filament
- SLA 3d printing resin
- Rigid foam -- for CNC milling, not laser cutting

Purchasing Materials:

A user can approach a Student Safety Monitor who will tally the material(s) on a sales slip which the user will then bring down to the SMFA Art Store to pay. Materials sales transactions can not take place when the SMFA Art Store is closed nights and weekends.

Storage of materials and work

Students enrolled in classes scheduled in A212 may store labeled work on the large kitchen racks in room A210.

Student work being made in classes scheduled in A212 may be stored in room A210 for the life of that particular project and/or the last day of review boards or it will be subject to disposal.

In-process SLA (resin) 3D prints requiring drying after washing may be stored on the drying rack overnight but must be removed after they are cured.

SMFA DIGITAL FABRICATION STUDIO POLICIES

Rooms A212/A210

Cleanliness

Tables and stools should be put back in their original position(s) in the middle of the room and surfaces/floor cleaned/wiped down to remove any debris and/or stickiness.

Equipment specific clean-up

Laser cutter –

- To avoid fire, check for debris in tub (under grate).
- Remove waste debris and wipe down machine if dust/debris has accumulated.

CNC Router –

- Check to make sure Festool vacuum bag (under the CNC) isn't full.
- Periodically use shop vacuum in addition to CNC's automatic vacuum to keep down dust during cuts.
- Unfasten (unscrew) waste material and discard in appropriate bin.
- Sand down CNC's MDF bed waste board if the surface has become uneven due to fastener pullouts, or routing/cutting errors.

Ultimaker/FDM (plastic spool) 3d printers –

- Remove prints, rafts, and/or support material and wipe down. Dispose of waste filament in appropriate bins.

Formlabs/SLA (resin) 3d printers –

- After removing prints on their build plates and placing them in the washer, make sure that the tanks is clear of debris (pieces of failed prints) and that the machine is "Primed" for the next user.
- Stainless steel washing/curing stations must be cleaned of debris and wiped down with Isopropyl Alcohol which is available in a spray bottle labeled IPA.