



College of Architecture and Planning

UNIVERSITY OF COLORADO DENVER

Policy Title: **CAP Design Fabrication Labs and Annex Use Policy**

Effective Date: November 2019

Approved by: CAP Dean's Office

Last Reviewed/Updated: November 2019

Applies to: All College of Architecture and Planning students, faculty and staff

The College of Architecture and Planning Design Fabrication Labs (also referred to as Fab Labs) are available for students currently enrolled in courses that require model building and the exploration of ideas, techniques, and prototypes through making. The College has two locations for fabrication. The first facility is located on the 4th floor of the CU Denver Building (4th Floor Fab Lab). The lab supports analog woodworking and model building. Additionally, this facility contains 3-D printing and laser cutting labs, and has spray paint and assembly areas. The second location is in the lower level of the Annex building (Annex Lab) located on the north side of the CU Denver Building. The Annex lower level is an extension of the 4th Floor Fab Lab and houses a full-scale fabrication space, metal working tools, a CNC plasma cutter and the 5-Axis CNC machine.

Fabrication Lab Use

In order to use the CAP fabrication labs, students must take the Canvas Building and Basic Safety course, attend Safety Trainings, agree to the Safety Agreement form on Canvas, and pass all required tests. (See Lab Safety Certification, below). Upon completion of training for each lab, students will gain card swipe access. Training is required to access and use the equipment located in the Woodshop, Laser Lab, 3-d Print Lab and Annex Lab.

Card swipe access will remain valid for the duration of a continuous pursuit of a degree. Students who continue in the College of Architecture and Planning from a first degree to a second and who have completed all Lab training may be permitted to demonstrate their skills in order to waive re-training. Access to the lab may be revoked if a student is found to be in violation of any policy or procedure or is found to be unsafe in any way.

Lab Safety Certification

All users must complete the "Building and Basic Safety" and all four machine training modules to gain access to the 4th Floor Fabrication Lab.

Lab certification consists of: completing the Building and Basic Safety Canvas course, reading the safety policy, successfully completing each online test and demonstrating safe practices during skills assessment on selected pieces of equipment. Test scores must be 80% or greater to pass. Students have two attempts at testing before they are required to re-train for the failed topic. The Building and Basic Safety is available on Canvas and a training schedule will be made available by the Director of the Fabrication Lab and distributed to students at the beginning of each semester. Lab Certification is valid for the duration of a single degree without an extended leave from the program. Access to the labs begins after all training to all students who have passed the safety training tests on canvas is complete and the student ID card office is able to process the activation of ID card requests.

Training schedules are posted electronically at the beginning of each semester.

http://supersaas.com/schedule/CU_CAP/Design_Fabrication_Lab_Training

Students who are enrolled in courses in the School of Architecture and Planning may use the Design Fabrication Labs in support of their coursework in CAP. The Design Fabrication Labs may not be used for personal work or coursework outside of the College of Architecture and Planning. Students who have received a grade of “Incomplete” in a course and need use of lab tools to complete their project(s) for that course must contact the Design Fabrication Lab Director for access during Semester breaks. Incomplete Grades work during Semester breaks must be scheduled with the Design Fabrication Lab Director. Students who have graduated do not have access to the CAP fabrication labs at any time.

Personal Projects

Lab Equipment may not at any time be used for any purpose other than course work related to classes within the College of Architecture and Planning. Any and all personal use of lab equipment is strictly prohibited.

Faculty, staff and students currently enrolled, may not use the fabrication labs for non-course related projects. Personal projects are prohibited. A “personal project” is any use of the fabrication labs that is not related to completing work for a course (student), teaching a course (faculty/staff) or performing work that supports activities in the College of Architecture and Planning.

Fabrication Lab Hours

Hours are posted on the Fabrication Lab doors each semester. Lab hours may vary, depending on the activities taking place in a given semester. The Design Fabrication Lab closes during all major holidays and inclement weather.

Annex Lab Access

Any access to the Annex requires students, staff and faculty to be trained for the use of the tools and build spaces located within. Requests for use of the fabrication spaces in the Annex must be outlined in a proposal to the department chair. Department Chairs will submit their

recommendations to the Design Fabrication Lab Director for final approval. For approved proposals access to the Annex will be granted through the use of an encoded University of Colorado Denver ID card. At no time should faculty, staff or student monitors lend their ID card to anyone.

Special Project Annex Lab Hours

A faculty member may request an increase in the available work time in the Annex for a particular project anytime between 8 a.m. and 9 p.m. The faculty member must cover the cost of the additional student lab monitor(s) out of their project, contract or grant funding. Extended project-specific monitors will report to the Design Fabrication Lab Managers but will hold hours specifically for the paying project. During these extended operating times, CAP students not involved/enrolled with the course/project will not be able to access or utilize the Annex services or spaces.

Any faculty teaching courses that utilize the Annex Fabrication space will be required to clean-up and remove all materials and supplies at the end of the semester.

CNC Plasma Cutter

Use of the Plasma cutter requires operators and observers to wear shade 10 glasses or welding masks if they are inside the screened area. The screens must be closed during operation. The CNC Plasma cutter is restricted to uncoated, flat steel sheets.

The CNC Plasma Cutter will be available to students and faculty who have attended training and are capable of tool-pathing jobs on the machine. Students or faculty may use the CNC when they have reserved time and a monitor is on duty. Faculty should direct students through coursework and assignments in appropriate use of the CNC machine. The Annex's regular hours of operation will be posted and made available at the beginning of each semester. Appointments must be made in advance to secure time on the CNC machine. Appointments can be made by visiting: http://supersaas.com/schedule/CU_CAP/CNC_Plasma.

5-Axis CNC Router

The CNC Router will be available to students and faculty who have attended training and are capable of tool-pathing jobs on the machine. Students or faculty may use the CNC when they have reserved time and a monitor is on duty. Faculty should direct students through coursework and assignments in appropriate use of the CNC machine. The Annex's regular hours of operation will be posted and made available at the beginning of each semester. Appointments must be made in advance to secure time on the CNC machine. Appointments can be made by visiting: http://supersaas.com/schedule/CU_CAP/CNC_Machine.

The Annex Upper Level

The Annex Upper Level is designed as storage, office and gallery space. Without the existence of ADA accessibility or restrooms on the second floor, these spaces cannot be used to hold scheduled classes. Faculty and students may use the space from time to time for impromptu

pinups and meetings that are directly related to previously approved uses of the Annex facilities. In order to use the upper space, faculty and all students must complete the Basic and Building Safety Training course and any additional courses required to use the Annex Lab facility.

CAP guests who are not students are permitted in the upper level of the Annex only when accompanied by authorized faculty or staff member.

Build Spaces (located in the Annex Lobby and lower level)

There are three build spaces available in the Annex, two on the lower level and one in the lobby. Faculty may request the use of the Annex's full-scale build spaces by submitting the request for space form to their department chair. Faculty may request one, two or three of the spaces available for the duration of a semester. The chairs and the Director of the Design Fabrication Lab will review requests for build space and attempt to make accommodations whenever possible.

Monitors

Any work in the Annex Lab must be accompanied by a student monitor, Lab Staff, or Trained faculty lead who is CPR/First Aid Certified. If a monitor, Lab Staff or CPR/First Aid Trained faculty member is unavailable, the Annex must be vacated and will remain closed until one is available. CPR/First Aid Trained Faculty may act as a monitor for their students but must remain in the space. If the faculty member must leave, work will stop and students are required to leave the building until another monitor is present.

Material Storage

Materials in the 4th Floor Fab Lab must be stored on the racks located outside of the 3D print room in the General Lab space. All materials must be removed at the end of each semester. Any materials remaining will be discarded.

Materials in the Annex Lab must be stored on the available racks. It is not acceptable to leave materials on the floor or leaning on walls and access to the Annex will be restricted until corrected. The area between the CNC room and garage door must be kept clear and unobstructed to ensure safe and easy material movement from delivery to the CNC table and/or storage racks.

The storage racks may be requested by faculty on an as-needed basis for the duration of their project. At the completion of the project material must be removed or discarded. Any material remaining one week after the project ends will be offered to students to use for their studio projects. The Design Fabrication Lab will use one shelf on the racks for CNC machine spoil boards. This LDF/MDF material is restricted for use as spoil boards and must not be removed.

Tools

Tools checked out from the 4th Floor Fab Lab must not be left in the Annex overnight. Any tools checked out from the 4th Floor Fab Lab must be returned before the lab closes.

Cleaning

The CNC router room must be kept clean at all times. Waste boards from 2-D projects must be immediately cut down following the completion of each sheet or part and dust from 3-D mills must be vacuumed and discarded. The Annex must be cleaned, swept + mopped every night by the student, staff or faculty monitoring the activities/work for the evening. Floors will be free of any debris or materials, tools will be put away in an orderly fashion, and not left lying around. All trash will be placed in bins and placed by the garage door. Students using the Annex are responsible for cleaning up their materials and waste before leaving and Monitors are responsible for final closing including sweeping, mopping and tool storage.

Attire

Safety glasses will be worn at all times in the Labs. Required attire is as follows: closed-toe shoes, long hair pulled back, loose or baggy clothing removed, jewelry removed, and no headphones/earbuds.

Violation

Violation of these procedures will result in a halt in work requiring immediate attention. If the problem persists, access to the Labs will no longer be permitted to the individual(s).