

WORKSHOP HANDBOOK



CEPT
UNIVERSITY

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TEAM



Advisor
Anand Belhe



Advisor
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Director, Workshops & Exhibition
Urvi Sheth



Executive Officer
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FabLab Co-ordinator
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Bipin Panchal



Wood Workshop Technician
Yatin Mistry



Wood Workshop Technician
Chirag Gajjar



Exhibition Technician
Juned Shaikh



Metal Workshop Technician
Chhagan Mahajan



Research Intern
Dax Patel



Wood Workshop Assistant
Kirti Vaghela



Metal Workshop Assistant
Sadashiv Verma



Clay Workshop Assistant
Raju Vaghela

ABOUT

CEPT University Workshop plays an integral role in supporting learning through hands-on experimentation, exploration of materials, model making and prototyping. The workshop has dedicated facilities for working in wood, metal, ceramic, textile, model-making and a Fabrication-Lab.

The main focus of CEPT University Workshop is to deepen the culture of 'Learning by Making'.


The safety of students, faculty, staff and visitors is a principal consideration in every activity. The Workshop provides equipment, facilities, staff, mentoring and support to all students and faculty of CEPT University and members for innovation through material-based research.


The workshop, spread over 11625 sq. ft, is equipped with state-of-the-art computer controlled (CNC) machines, including a 3-axis milling machine, 3D printer, laser cutter, electric kilns, weaving looms, a wide array of traditional metal and woodworking machinery with a range of power and hand tools.

The workshop is staffed with technicians, faculty and experts who instruct and guide students in the use of the equipment. This will help students bring their projects to life, from model making to full-size construction of furniture and architectural elements.

WORKSHOP LAYOUT

  Toilets

 Drinking Water


 Entrance

 Student's Locker Room

 Paint Room

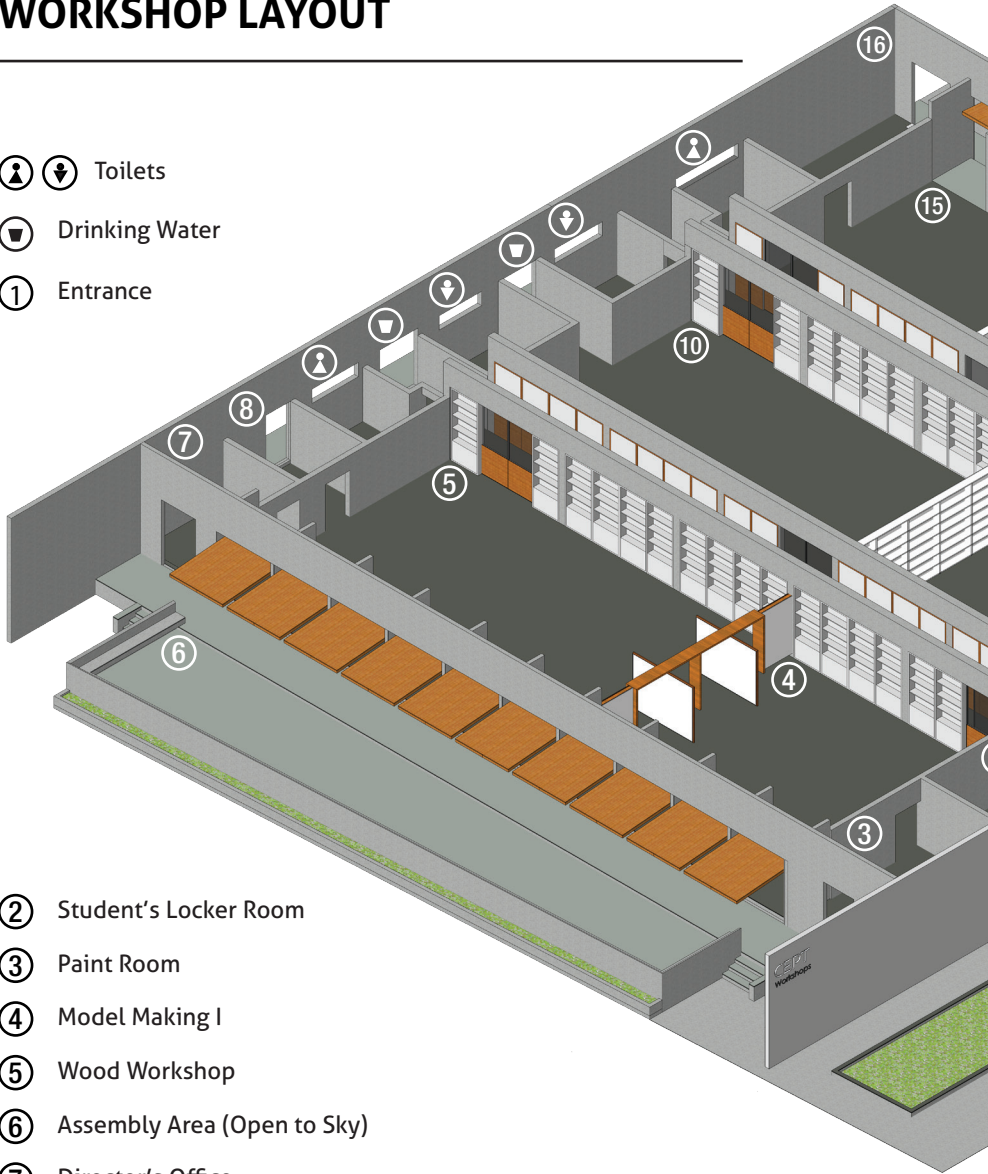
 Model Making I

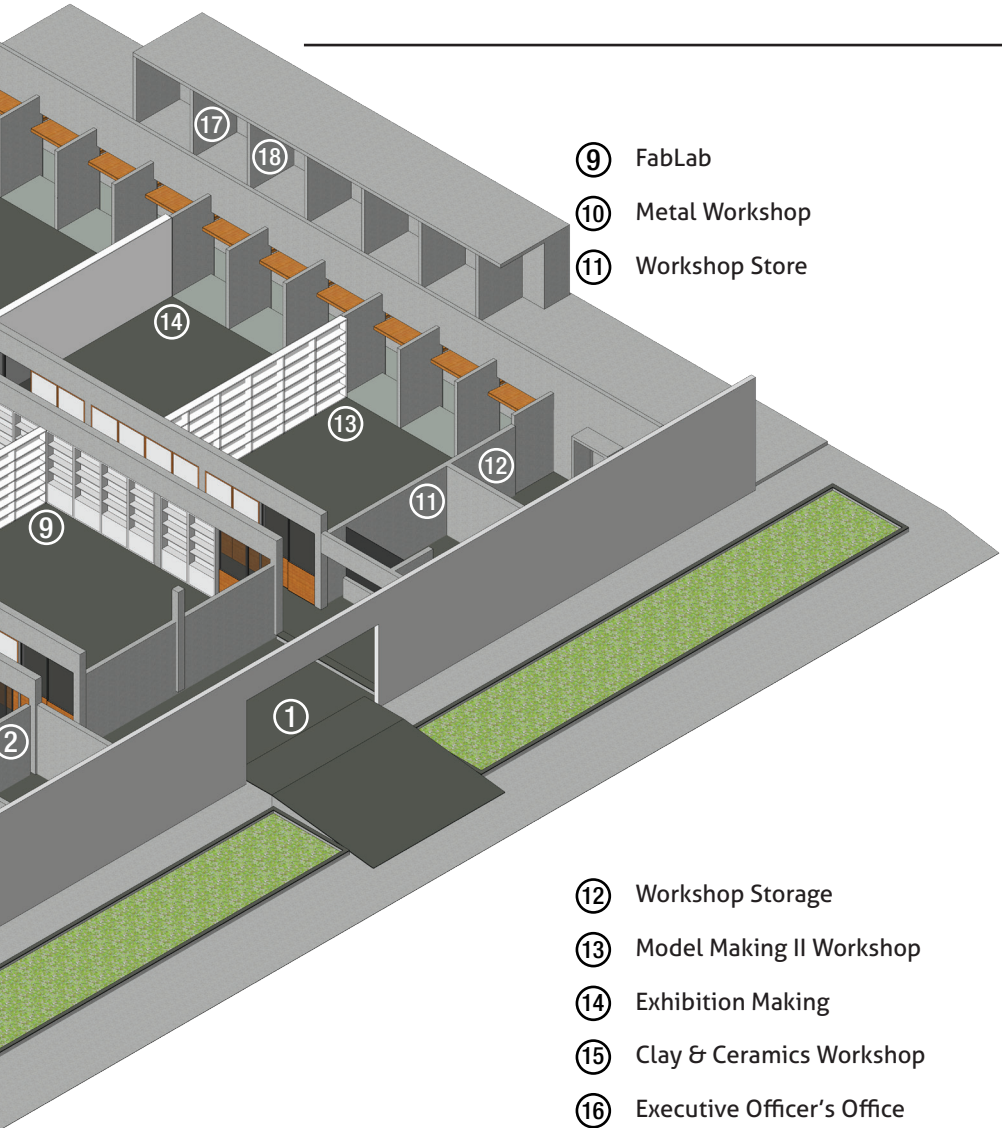
 Wood Workshop

 Assembly Area (Open to Sky)

 Director's Office

 Electric Panel Room





- ⑨ FabLab
- ⑩ Metal Workshop
- ⑪ Workshop Store

- ⑫ Workshop Storage
- ⑬ Model Making II Workshop
- ⑭ Exhibition Making
- ⑮ Clay & Ceramics Workshop
- ⑯ Executive Officer's Office
- ⑰ Kiln Area
- ⑱ Wet Area

FACILITIES

- Model Making Workshop I
- Wood Workshop
- FABLAB CEPT
- Metal Workshop
- Model Maing II
- Clay & Ceramics Workshop
- Paper & Print Making Workshop

OCCUPANCY

To maintain user safety, the workshop has adopted following occupancy limits. This policy takes into account, space, equipment and staff limitations of the Workshop.

Occupancy of workshop may be limited to 20 users per shop technician.

The primary responsibility of shop technicians is to monitor safety of users. The number of users which an individual shop technician is able to effectively monitor is dictated by many factors.

It shall be each shop technician's responsibility to determine how many users they can effectively monitor under any given circumstances.

Workshop Capacity:

- Model Making I : 40 People
- Wood Workshop : 10 People
- Fab Lab CEPT : 40 People
- Metal Workshop : 40 People
- Model Making II : 40 people
- Clay & Ceramics Workshop : 40 People
- Print and Printmaking: 20-25 People

IF OCCUPANCY LIMITS EXCEEDS

- The most recent arrivals will be asked to retire as earlier users leave or machines are available (shop technicians will admit new users).
- If workshop is overcrowded, it may be closed to establish order at the discretion of the shop technician/s on duty.
- Please consider occupancy limits when assigning projects and deadlines.
- Notify Workshop Director of expected heavy shop use so that adequate staff can be deployed.
- If workshop occupancy is expected to exceed the prescribed limit, you should make arrangements for additional shop facilities.
- Expert technicians to be scheduled at least 1 week prior to the day of expected shop use.

WORKSHOP TIMINGS

General Operating Hours

Mon - Sat : 10:00 am - 7:00 pm

Lunch : 1:30 pm - 2:00 pm (The workshop will remain closed for lunch)

Sunday - Closed

Model Making II Workshop

Mon - Sun : 8:00 am - 0:00 am (mid-night)

Lunch : 1:30 pm - 2:00 pm (The workshop will remain closed for lunch)

This facility is available for 24 hours as and when declared by the Registrar. Students who have registered for the current semester will be able to access. A shop technician shall be available during the general operating hours.

It is user's responsibility to clean the workshop after use.

Workshop Time Table

Workshop time table is established each semester for all workshop based courses. The time table is posted on the workshop notice board and updated on the link:

<https://cept.ac.in/workshops/timetable>

WORKSHOP ACCESS

- All workshop users should be registered students of CEPT University (who have paid the course fee for the current semester) or faculty or staff or members and have legitimate course-related work.
- It is mandatory for all workshop users to complete the workshop orientation program, conducted at the beginning of every semester, wherein the students go through machine training.
- Unsafe use of workshop facilities or equipment may result in revocation of access to the facility. Such revocation of shop access privileges must be reconciled with the Workshop Director.

It is mandatory to swipe your smart card every time you use the workshop.

NON-ACADEMIC PROJECTS

- The University's Campus Office has determined that use of the CEPT University Workshop for non-academic purposes exposes the University to unnecessary risk and does not serve the mission of CEPT University.
- All shop use must be directly related to CEPT University's courses. The Research centers of CEPT University and users associated with the FabLab are allowed to use the workshop with prior permission from the Director of CEPT University Workshop.

HOW TO USE WORKSHOP

Follow the steps:

- It is mandatory for a technician or a trained student assistant to be present in workshop during operation.
- Workshop staff provides user assistance, training and supervision while offering users an extensive knowledge of materials, tools, processes and safety.
- Instructors of courses, who would be utilizing the workshop, are encouraged to contact workshop staff to arrange for an introduction to workshop capabilities and procedures.

Tool Check out:

- Issue tool from shop technician before removing any tool from the shop.
- Obtain special permission for periods longer than class hours.
- Tools should be returned to the shop promptly upon completion of use.

24 Hrs Tools Checkout

- Tools (listed as borrowable) could be checked out for 24 hrs by submitting the complete declaration form to the shop technician (Chirag Gajjar).
- User is responsible for any tools checked out. If workshop equipment is lost, stolen or damaged while in your possession, user would be responsible for replacement.
- Tools checked out overnight should be issued less than an hour before closing.
- Tools checked out overnight must be returned within one hour of opening the next day.
- Tool Check Out privileges can be revoked any time at the Director's discretion.

List of Machines & Tools:

<https://cept.ac.in/workshops/tools-machines-list>

Booking Time Slot for Machines:

- **FabLab :** <https://fablabcept.setmore.com/>
- **Wood Workshop:** Except for class hours, students can book time slots by writing an email to the Shop Technician (Chirag Gajjar)
- **Metal Workshop:** Except for class hours, students can book time slots by writing an email to the Shop Technician (Chhagan Mahajan)

FABLAB MEMBERSHIP POLICY

To become member, one must meet the following requirements:

- User should be minimum 16 years of age or have a waiver signed by the guardians in case of a minor.
- Training in the FabLab is based on projects and peer learning; you must take part in the capitalization of knowledge and instruction of other users.
- Engage in documenting your project using the license of your choice.
- Submit a copy of documentation (photo/video/text/ any other media appropriate for respective project) to Lab Manager or Co-ordinator.
- FabLab CEPT shall be acknowledged wherever work / models / prototypes are published/ exhibited.
- Pay the monthly membership fee.

Note:

1. All CEPT students with valid student ID card are members of FabLab and need not pay any additional fees.
2. Any student/professional (outside CEPT University) registered for SWS course based on FabLab will be allowed to use the facility for the duration of course only.
3. Registration for any other course of SWS, except those which are FabLab- based, will not be valid during the course period.

Monthly membership fees:

1. INR 10,000 for student (Outside CEPT University with valid student ID card)
2. INR 25,000 for professional
3. INR 25,000 for start-ups (2 card subscription includes access to all machines, mentoring, chance to be part of Rajeevi Circle Fellowship program, opportunity to participate in Maker fest).

Membership fees waived off in special situation if your technical expertise fall within FabLab's agenda and if you are able to contribute to the knowledge building activities (Example: Four intensive hands-on workshops per month)*

*Pre-approved by the committee.

Guidelines for use of the equipment and machines:

- Before using a machine, one should get registered and trained.
- When the machine usage is over, the user must ensure proper clean-up of the machine used by them, ensure not to leave any waste and make sure that the machine is not in operation after use.
- The user must inform an official at the FabLab if they found any malfunction of the machine during use.
- File downloads are permitted. However, they must be in full accordance with the rules in force. The downloaded file should not undermine morality, contain political messages or make an apology of ideology contrary to the laws in force in our country. The file will be transferred to your own media to avoid cluttering the PC and later will be deleted from the lab PC.

Detail machine guidelines for respective machines:

- Members must take care of the premises and equipment at their disposal and report any malfunctions. In case of failure of a machine, you must notify an official of the FabLab and report the anomaly to them.
- The spaces used must be left clean; low volumes of waste must be deposited in the bins provided for this purpose. If the volume is large, they should be taken away for disposal.
- Users will be held responsible for any accidental damage to FabLab equipment and property and need to compensate for the same.
- The activities are always supervised by one or two technicians. Technicians can at any time exclude a person from the lab for disrespectful and/or dangerous behavior.
- FabLab is not responsible for any loss of your belongings.
- FabLab is not responsible for any accident or unfortunate events that happen in the Lab. User would indemnify the University any such Loss / damages. The signer is responsible for his/her own safety.

Prohibition:**General:**

- No smoking inside the premises.
- No edibles allowed inside the premises.
- Users to not endanger or jeopardize other users by improper use of the tools available.
- Users should not provide access to animals. It is prohibited except for animals assisting persons with disabilities.

Technical:

- Users should not install software on computers without authorization of the FabLab.
- Users should not delete files on hard drives or change the hardware configuration.
- It is strictly prohibited to take home local materials, books or devices available at the FabLab.
- Users should not copy, hack software or other protected files or infringe any copyright.
- Users should not make counterfeit objects or create objects that can harm others. They must be produced and disseminated in accordance with the laws on industrial and intellectual protection.

Material use:

- The use of materials is subject to strict usage rules to maintain the machines and quality production. Failure to comply with the rules will result in automatic cancellation for that user.
- FabLab CEPT cannot be held responsible for damage of materials caused by wrong machine settings or misuse on the part of a user.
- Consumables and replaceable parts of machines will be taken care of by Lab.

SAFETY MATTERS

The safety of students, faculty, staff and visitors is a principal consideration in every activity.

The goal of the CEPT University Workshop's safety policy is to develop positive attitudes regarding safety among all members.

It is essential that Deans, Directors, Department Heads, faculty and staff supervisors take an active part in initiating preventive measures to control hazards associated with activities under their direction.

The success of this policy depends upon the co-operation and support of everyone.

PERSONAL PROTECTIVE EQUIPMENT

- It is compulsory for all workshop users to wear closed toe shoes. Sandals/open toe shoes/ slippers are not allowed.
- Remove coats, jackets, 'dupattas', and shawls. Roll-up loose sleeves, remove loose jewelry and tie your hair tight.
- Safety glasses or goggles are available and **MUST** be worn during the operation of any stationary or portable power equipment. Non-tinted, plastic lens prescription glasses are also acceptable. If you don't find, please ask the technician.
- Ear muffs and ear plugs are available and should be worn during sustained use of noise generating equipment.
- Dust masks are available and must be worn when generating significant amount of dust and fumes. It is mandatory in wood workshop.

SAFETY GUIDELINES

- **No Cell phones / Personal Music**

The workshop demands undivided attention of the students. Hence it is strictly prohibited to use cell phone or any gadgets inside the workshop. If need be, users can use their phones in immediate premises of the workshop.

- **No Headphones**

Headphones are prohibited when operating power tools.

- **Do not bring food or drinks in the workshop**

- **Drugs and Alcohol are strictly prohibited. Never use workshop under the influence of any substances.**

- **Know when to call it a night.**

Sleep deprivation impairs judgement. Despite what your instructor might tell you, your project is not more important than your fingers. Before starting any machine, be sure to check that it is set up correctly and fully operational.

Keep your fingers clear from the point of operation of machines by using special tools and devices such as push sticks and paddles.

Select the proper size and type of tool for your work. Never use a tool unless it is sharp and in good condition. Inform a shop technician if tools are damaged, dull or in need of adjustment.

- **Do not hurry**

Avoid working in the workshop if you are in hurry. Haste can cause serious physical damage and may not yield quality work. Invest enough time to complete your work.

- **Never work alone**

There must be two adults present every time you use the workshop.

- **Ask for Help**

If you are unsure about how to execute the operation of a tool safely, have the workshop technician assist, demonstrate and observe to help you become familiar and comfortable.

If you have not worked with a specific material before, consult the workshop technician for precautions, methods and instructions before you start working.

- **Consult with Workshop Technician**

Before performing any procedure you are unfamiliar with decide if the work can or should be done. Seek help of technician to ensure your safety and efficiency of the machines.

Know the hazards associated with your work. Be sure that you are completely educated on the proper use and operation of any tool before using it. If you cannot do a job safely in the workshop, don't do it. Think through the entire job before starting.

Report any injury, however minor, to a workshop technician

- **Keep sharp-edged & pointed tools turned down**

Do not carry sharp tools in your clothes' pockets. Do not swing or raise your arms over your head while carrying tools. Use a brush or special tool for removing chips, shaving and debris. Do not use your hands to clean shavings or cuttings - they can be sharp! Your work should not pose danger to you or others.

- **Be thoughtful and helpful towards other shop users**

Caution other students if they are not following safe operating procedure. Check power cords and plugs on portable tools before using them.

- **Leave tool & equipment guards in place**

This is especially true for the table saw. The guard with the anti-kickback device should always be on the saw unless the operation is not possible with it in place.

- **Clamping**

Whenever possible, mount the work in a vise, clamp or special holder. This is especially important when using chisels, gouges, portable electric tools or drill press.

- **Clean up after using the workshop**

Before you leave the lab, place the tools at their appropriate place and assure that all the machines are cleaned and the floor is swept. Allow a minimum of 20 minutes for your clean-up procedure.

- **Floor safety**

The floor should be clear of scrap blocks and litter. Keep models, prototypes and other equipment and materials out of traffic lanes. Immediately wipe up any liquids spilled on the floor.

POWER TOOL SAFETY

- Never remove or adjust a safety guard on any machine or tool without permission.
- Be awake and alert at all times.
- Never operate a power tool when you are tired.
- Never attempt to use a tool that you are unfamiliar with.
- Most cutting tools should work without the use of excessive force
- If a tool is not working properly, shut the power off immediately and inform a shop technician
- Wear appropriate personal protective equipment as per instructions on page.
- Seek the assistance of a shop technician if you have any questions about the safe operation of any tool.
- Think through an operation before performing it. Know what are you are going to do and the machine used for it.
- Make all the necessary adjustments before turning on a tool.
- Allow the tool to reach its full operating speed before feeding it into your stock.
- Work the tool carefully and control speed of the material feeding to cut easily.
- If a tool does not cut properly and easily, it is probably dull or damaged. Please bring it to the shop technician's attention.

- Avoid getting distracted while using a tool. Do not disturb other shop users while they are working.
- When you are done using the shop, put away all the tools, clean up your workspace and sign out.
- For each FabLab machine there is specific machine guideline available. User must follow and comply with the same as stated.
- User must take machine training given by Fablab to qualify for slot booking and working on machine.
- For Fablab machine access one has to book the slot online and take file approval before approaching the machine with material.
- The use of materials is subject to strict usage rules of particular machine. Only permitted material will be allowed. User must not leave machine or tool unattended while under operation.
- Keeping your own material inside the FabLab premises is strictly prohibited. Kindly take all your leftover materials with you.

FIRST AID DRILL

- Inform about the injury to shop technician.
- Shop technician will report to both workshop direction and SSO.
- Concerned technician will be responsible to take the injured user to the nearest hospital/medical centre.
- SSO will coordinate from here onwards.

Every student of CEPT workshop and workshop staff are insured upto sum of INR 75000 for medical facility at several listed hospital by CEPT University.

Note :

List of hospital under insurance coverage is available in the link of CEPT workshop.

NEARBY HOSPITALS

Samved Hospital

Commerce College Road,
Near Stadium Circle, Navrangpura,
Ahmedabad – 380009

Contact: 079 2640 2064

Distance: 1.7 kms

Shreeji Orthopaedic & ENT Hospital

F/5, Veemurti Complex, Opp. Oxford Tower,
Gurukul Road, Memnagar, Ahmedabad - 380052

Contact: 079 27479053

Distance: 2.4 kms

Jain Hospital and ICU

1st Floor, Oxford Tower, Gurukul Road, Memnagar,
Ahmedabad - 380052

Contact: 079 27478122

Distance: 2.4 kms

Nidhi Hospital

Shree Kunj, Near Patil Park,
Opposite Vodafone Office, Stadium Circle,
Ahmedabad - 380009

Contact: 079 4023 2121

Distance: 2.3 kms

SAMPLE WORKSHOP UTILIZATION FORM

WORKSHOP UTILIZATION FORM

Date: _____

I, _____, student of _____ in _____ year request you to kindly allow me to use the workshop on _____ from _____ to _____ under special permission from the coach/mentor _____.

I (the undersigned) solemnly declare that as a user, I will be solely responsible for any damages or loss done to any machines, tools or any property during my work in the FabLab. FabLab authorities are permitted to recover the cost of the same from the undersigned.

During the period, in case any injury or accident that takes place while using the FabLab, I hereby agree to defend and hold CEPT University Fablab, its administrators and any of its employees not responsible for any actions, suits, damages, claims or judgments that may result from any personal injury I may sustain or that I may cause while on the premises of FabLab, CEPT University, Ahmedabad.

In case the services of workshop technician needs to be availed for the period an amount of Rs.100/- per hour X number of hours (cash payments on the same day of utilization) will be charged from the undersigned.

Student Signature

Coach / Mentor Signature

Name: _____

ID: _____

Mobile: _____

Email: _____

Signature of Workshop Coordinator

SAMPLE WORKSHOP FABLAB FORM

FABLAB UTILIZATION FORM

Date: _____

Name _____ Address _____

_____ Organization _____

Mobile _____ email _____

Purpose of Fablab utilization _____

From _____ to _____.

I (the undersigned) solemnly declare that as a user, I will be solely responsible for any damages or loss done to any machines, tools or any property during my work in the FabLab. FabLab authorities are permitted to recover the cost of the same from the undersigned.

During the period, in case any injury or accident that takes place while using the FabLab, I hereby agree to defend and hold CEPT University FabLab its administrators and any of its employees not responsible for any actions, suits, damages, claims or judgments that may result from any personal injury I may sustain or that I may cause while on the premises of FabLab, CEPT University, Ahmedabad.

Signature

Coach / Mentor Signature

Signature of Workshop Coordinator / Director

SAMPLE DECLARATION FORM

DECLARATION FORM

Name _____ Org _____

Address _____

Mobile _____ Email _____

I am engaged in attending Fablab as part of my research / work. I understand that the Fablab involves various aspects of working which includes the use of both manual and electrically powered tools, equipment and machinery.

I am aware of and understand the possibilities of serious injury and accidents from using any Fablab related tools and materials. I agree to comply with standard safety rules and practices required while using or operating such tools and I agree to use or operate them in an otherwise safe manner.

I also agree to refrain from using any tools for which I do not have proper instruction or extensive prior experience or feel unable to operate the same in a safe, competent manner. I represent that I have the skill and training necessary to keep myself and others safe when using the tools. I also understand that I may be asked by the technician/instructor/mentor/coach not to operate certain machines, tools, and/or equipment during and hereby agree to follow the technician's/instructor's/Coach's/Mentor's request(s). I understand and agree to use safety equipment such as safety glasses and or face shields at all times while operating lathes, grinders and all other Fablab machinery and equipment. I also agree to not operate or use any equipment in the Fablab without an instructor/mentor/coach present.

I hereby assume the risk and responsibility of any and all injuries that I may sustain or cause in the pursuit of any activities while on the premises. Also, I hereby release and forever discharge and agree to defend and hold CEPT University Fablab, its mentors, parents, coaches, school administrators and any of its employees or instructors/mentors/coaches not liable for any actions, suits, damages, claims or judgments that may result from any personal injury I may sustain or that I may cause while on the premises of Fablab CEPT University, Ahmedabad or any other locations we work while engaged in the activities specified above. I also understand that I am responsible for paying all costs resulting from medical treatment received as a consequence of using any Fablab or power tools and participating in any event(s).

Signature of the Candidate _____

Date: _____





CEPT
Workshops

Kasturbhai Lalbhai Campus, University Rd, Navrangpura, Ahmedabad, Gujarat 380009