HEALTH, SAFETY, AND ENVIRONMENTALLY FRIENDLY WORKING METHODS

The workrooms of the Faculty of Art and Design are *shared by all the students and teachers*. To make the work go smoothly and safely, you should respect other users and follow the rules described in this guide.

University of Lapland
Faculty of Art and Design

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Contents

PROCEDURES

HELP OTHERS AND YOURSELF BY KEEPING EVERYTHING TIDY AND CLEAN

It is fun to start working if the room has been cleaned and everything is in place. When the tools, equipment, and materials are clean and in their right places, it is easy to find and use them. There is space around the tables and work points when the previous users have cleaned up their mess and stowed their gear where it belongs. This is, after all, what we all expect of a workroom.

Cleaning up your own mess after work is necessary in order to maintain a sound work atmosphere. In addition, we need **solidarity**. Everyone should be ready to pick up the trash or wash the tools left behind by others. Having pleasant and well-functioning workrooms depends mainly on your own action. If a workroom is dirty and untidy to begin with, it is likely to make the next users negligent as well. For the sake of common good you must sometimes kindly ask others to consider work safety, the environment, and the work atmosphere.

Store the tools and unfinished works in their proper places (racks, shelves, and cabinets). Things left on the table collect dust and are in other people's way. It is the users' own responsibility to keep the tables and work surfaces clean. Help the cleaning personnel by not leaving your gear on the floor. It is everyone's responsibility to keep the rooms and storages in order, because the cleaning personnel will only clean the floors. You must, however, also clean the floor if you make it dirty. **Finish your work before the session ends so that you have time to clean up before leaving.**

Wipe the dust with a damp cloth, because mere sweeping causes dust particles to get airborne. Fine particles that cannot be swept are the most hazardous ones. That is why you should use a damp cloth wrapped around the crosspiece of a squeegee. **Wipe off all chemical spills immediately.** They contaminate the air when they evaporate. When water evaporates from chemicals, the dangerous substances stick to the floors and walls as powder, get airborne, and end up in your lungs. Wipe off the residual clay and grinding dust, and use a vacuum cleaner that also works well on wet surfaces when working in the ceramics and plastic composition rooms.

In some groups, an **organiser** may be appointed from among the students. The organiser system can be arranged in a way that best fits the group. For example, in the beginning of the course each student may be assigned a day when they are to act as an organiser. The organiser is one of the last students to leave the workroom. As an organiser you are to make sure that the tables and floor have been cleaned, the machines have been turned off, water is not running, the lids of the cans and trash bins are closed, and everything is in place. Some workrooms also have a **checklist for the last person leaving the room**.

When filling out **room and equipment reservation lists,** write down your **full name, email address, and phone number** to ensure successful communication**.** For example, your enlarger device reservation is cancelled if you do not show up within an hour from the beginning of the reservation. The reservation lists usually have further instructions. Use polite wording when leaving notes and messages to other students.

If you steal materials or equipment, you also steal from yourself and your fellow students. **Make sure you return everything that your borrow.** Lost equipment make people frustrated and annoyed. Material losses also reduce the money available for teaching.

COLLECTION AND RECYCLING

We separate paper, cardboard, glass, metal, landfill waste, and hazardous waste from combustible waste. To reduce the volume of waste, use our materials wisely and avoid all disposable materials. Do not leave leftover materials, even if still usable, in the workrooms if there is no dedicated storage space for them. If you cannot find a new owner for the materials, make sure they are recycled in an appropriate manner.

Waste management is based on the principle of prioritisation, that is, we primarily try to avoid the creation of waste and to recycle it if possible. If the waste cannot be reused as such, the first thing to do is to recycle it. We therefore make every attempt to separate **recyclable waste** products – such as glass, metal, paper, and cardboard – from combustible waste so that they can be reused as raw material. The secondary alternative is to use waste as a source of energy, in which case it is sorted out as **combustible waste**. The last alternative is to take the waste to

a landfill if reuse is not possible. Only waste that cannot even be used for energy production is sorted as **landfill waste**.

The Faculty of Art and Design produces a great deal of waste that differs from normal waste. Pay special attention to separating this material. Waste products considered as borderline cases:

- Dirty paper/newspaper and photographic paper = combustible waste
- Plastic with plaster or concrete stains and plastic foam = combustible waste
- Glass jars with dried-up paint = landfill waste
- Metal lids with dried-up paint = recyclable metal
- Empty metal paint tubes/containers = recyclable metal
- Empty non-pressurised spray cans (no sound when shaken / no hiss) = recyclable metal
- Pressurised spray cans (a sound when shaken / an audible hiss) = hazardous waste
- Natural sand and rock materials, plaster, dirty glass, and mirrors = landfill waste
- Dried-up paint = combustible waste
- Liquid paint = hazardous waste (unless otherwise instructed by the package markings)
- Large pieces of combustible waste must be cut into smaller pieces (max. 50 x 50 cm). There are no limitations regarding landfill waste, but you must make sure the items are not too large for the waste container or truck.

If you are not sure about a piece of waste, check how it should be sorted – especially if you suspect it may be hazardous waste. The Waste Management Guide of the University of Lapland explains our waste management system and how we sort regular and hazardous waste. The guide is available at www.ulapland.fi/greenoffice.

CONSIDER YOUR HEALTH

CLEAR THOUGHTS IN FRESH AIR

Close all jar lids and wash the tools immediately after use. This is important to keep the air clean and breathable in the workrooms. Use solvents as little as possible and always under an exhaust fan. When working in the evenings and weekends, remember to switch on ventilation. The switches are located in the workrooms.

AVOID HAZARDOUS CHEMICALS

During courses and workshops you will be taught how to use hazardous chemicals safely and how to give first aid. If you are working independently and use hazardous chemicals, you must first study their safety instructions. The safe use of chemicals also includes appropriate disposal or recycling.

The best way to improve work safety is to avoid using hazardous chemicals. You should therefore minimise the use of solvents and other hazardous or irritant chemicals. **If possible, use non-hazardous and organic substances instead of hazardous chemicals.** Use cooking oil, mild liquid detergents, Marseille soap, and tall oil soap (Mäntysuopa in Finnish). For example, you can wash your hands with cooking oil first and then with a mild detergent. Printing ink and paint come off with a mixture of tall oil soap and coffee grounds. Should you need turpentine, it is advisable to use a pine-based product (pinene turpentine) or odorless turpentine (non-aromatic petroleum ether) rather than mineral turpentine. Remember, however, that odorless turpentine is also harmful even though you cannot smell it. **Never use turpentine without protective gloves, because it permeates your skin.**

It is absolutely forbidden to eat in the workrooms. If you eat there, chemical vapours adhere to your food and end up in your stomach. When tired or immersed in your work, you may drink from a wrong cup or spill paint on your sandwich. Also make sure you do not chew or suck the end of a paintbrush, pencil, or any other tool.

SAFETY DATA SHEETS FOR CHEMICALS

A safety data sheet (SDS) is a document with information on the properties of a substance or mixture, on its risks and safe use, on the measures to be taken in case of an accident, and on the safe and environmentally friendly disposal or recycling of the substance.

The SDS is written for substances and mixtures that are classified as hazardous and for unclassified mixtures that contain a hazardous substance. In addition, if a substance is persistent, bioaccumulative, and toxic (PBT) or if it is very persistent and is very intensely bioaccumulative (vPvB), then an SDS must be written for it.

Safety data sheets of chemicals can be found on the Internet in PDF format. Use the chemical's name as the search word followed by "safety data sheet", for example: "sikaflex 221 safety data sheet". The correct hit (a PDF file) contains the words "safety data sheet".

In case of an accident involving a chemical substance, follow the first aid instructions of the safety data sheet and make sure that when visiting the first-aid station or doctor you know at least the name of the chemical that you used.

Some of the workrooms in the F-building also have paper versions of the SDSs of the most common chemicals.

DO YOU BELONG TO A RISK GROUP?

Pregnant women, fetuses, children, and elderly people are at greater risk than others. Also chronic illnesses such as heart disease, hepatitis, and allergy, as well as the use of certain medicines increase the risk. The immune system is temporarily weaker during a cold, after surgery, during stress, and under the influence of alcohol or drugs. Narcotic medication and drugs may double the effect of solvents on the brain. Anemia weakens one's resistance to toxins in the blood, and so forth.

If you think you belong to a risk group, find out about safety at work and discuss the issue with your teachers and your doctor.For those who teach special groups, the *Artist`s complete health and safety guide* is a good introduction to classroom safety.

FIRST AID

Each workroom has a first-aid kit containing adhesive bandages, other bandage equipment, and burn dressings. Stretchers are kept on the 1st floor in the woodworking room (laboratory technician's booth). Large emergency showers are on the 1st floor in the plastic composition room and in the painting room. Eye flushing showers are in the photography, graphics, textile printing, model construction, and woodworking rooms. Every workroom has a bottle of eye wash solution. In case of a chemical emergency, read the first-aid instructions in the safety data sheet. You will need the chemical's product name when reporting the incident and seeing a doctor. It is also useful to take a photo of the product label with your camera phone.

EYES

Avoid accidents by using eye or face protection. Do not use contact lenses in workrooms that contain dust or irritant chemicals such as acids or solvents. If you happen to wear them and spill chemicals on them, you must take them off. You must immediately start flushing your eyes. Acid and iron chloride spills must be flushed for 20 minutes. Other chemicals must typically be flushed for 10 – 15 minutes. Safety data sheets contain chemical-specific instructions on first aid. **Before you start working with chemicals, find out the locations of the eye flushing showers and eye wash bottles.**

FIRE SAFETY

Work that involves a fire hazard requires the presence of a teacher or the laboratory engineer. Find out where the fire extinguishers are before you start working with equipment generating heat, sparks, or fire. If you handle self-igniting chemicals, read their instructions first. Also find out what to do with papers and textiles that have come in contact with a flammable chemical. Large emergency showers are located on the 1st floor in the plastic composition room and in the painting room within the woodworking premises. All workrooms have detachable first-aid kits that contain burn dressings. The graphics premises have a fire blanket in the aquatint room.

The printed safety guide of the University of Lapland contains instructions on what to do in case of a fire alarm, among other things. The guide is also available at www.ulapland.fi/turvaopas.

PERSONAL PROTECTIVE DEVICES

SKIN AS NATURAL PROTECTION

Many foreign substances enter the bloodstream through our hands. You should therefore take care of all your wounds, scratches, and abrasions. Wear safety gloves, wash your hands thoroughly, and reinforce your skin by using protective creams and moisturisers.

If your hands are dirty, foreign substances end up on your face where the skin is thinner and more sensitive. When eating or smoking, contaminants pass from dirty hands to food or cigarettes, exposing you to swallowing accidents. Especially smoking with dirty hands must be avoided because some substances may become more dangerous when heated.

Use a protective cream to prevent oil and paints from permeating your skin. You can then wash the skin with mild detergents. Hand creams do not, however, give protection against most chemicals. Having washed your hands, use an ordinary moisturiser.

SAFETY GLOVES

The chemical resistance and uses of safety gloves are listed on pages **36 and 37**.

When working with solvents, use gloves that resist chemicals – for example nitrile gloves. Butyl rubber gloves protect against strong acids. You can keep your costly safety gloves clean by wearing disposable gloves on them. In the photo and ceramics labs you can wear ordinary rubber gloves. Protective gloves are personal property, so be sure to write your name or initials on them. The protective devices needed on basic courses are included in the "arts pass". The student union kiosk sells some types of safety gloves. Various types of gloves, mostly made of leather, are also needed as a protection against wounds, bruises, punctures, vibration, and heat when working for example on wood, stone, or metal.

Keep your gloves in good condition. Wash them with soap and water and let them dry in a rack with the opening facing the floor. Do not use sharp tools to clean them. Dispose of gloves that have cracks or discolorations. Broken, dirty, or wet gloves prolong your exposure to chem-

icals. They also make your hands heat up and sweat, which enhances the absorption of foreign substances. Use therefore clean cotton gloves inside the protective ones. Inner gloves also protect you against the material of the protective gloves. Powdered gloves are not recommended if you have atopic skin.

WEAR PROTECTIVE CLOTHING!

It is easy to work when you wear proper clothes. Dust and vapours cling to your clothes, extending the time of exposure. **Always leave your working clothes in the workroom when you leave or finish for the day.** Since hair collects dust easily, make sure you use a cap, scarf, or some other headwear when working in dusty conditions and when using chemicals. Always keep your working clothes in the dedicated place throughout the course. Take the clothes home only to wash them so that you do not smudge your apartment. Wash the clothes regularly and separately.

Make sure your clothes are not too loose to avoid getting them stuck in the machines. For the same reason, tie your hair and do not use chains or other hanging jewelry.

RESPIRATORY PROTECTIVE EQUIPMENT

You can protect yourself against dust (for example sawdust) by wearing a disposable face mask. However, these masks do not protect you from fine particles, gases, or fumes. Whenever dust is produced during a work phase, do it next to an exhaust wall or a corresponding ventilation system. By doing the job elsewhere in the workroom you expose all the others to the dust. In that case everyone should be wearing respiratory protection.

When working with products containing solvents, you must use a respirator with an A2 filter if the ventilation in the room is not sufficient.

HEARING PROTECTION

A brief loud noise or long-lasting fainter noise damage the hearing of an unprotected ear. In noisy work, use either earplugs or acoustic earmuffs that are available in the workrooms. Bear in mind that everyone else working in the same room are also exposed to the noise you make.

It is therefore polite to warn the others about the upcoming noise so that they can protect their ears in time. Sometimes you may have to consult the others and agree on a more suitable time for the noisy phase.

EYE PROTECTION

Eye and face protection is necessary to prevent accidents involving your eyes or face. Protect your eyes and face from vapours, solvents, flying debris, gases, sparks, metal particles, saw-dust, and liquid spills.

WORKROOM-SPECIFIC INSTRUCTIONS

The following instructions concern the appropriate working procedures in the F building's workrooms on floors 1, 3, and 4. The room number's first digit denotes the floor, and the following numbers get bigger as you move clockwise around the building.

VIDEO STUDIO AND STORAGE F1100

Clean up the video studio and storage after you have finished working. The studio and the storage room are also used for external productions. The studio is primarily meant for motion picture production. You may also reserve it for other use when it is vacant, but you have to consult the audiovisual media culture teachers to make sure that it can be used. The studio equipment may be under maintenance or it may be moved around. Use the electronic key to enter and exit the studio. Keep the door to Agora closed.

The safety issues concerning the studio and storage room relate to the following:

1. Electrical safety
2. Using the lighting truss
3. Moving the equipment
4. Using the fixed and mobile equipment

Electrical safety:

When rigging up lighting, you are always creating a new electric circuit. Some of the lights are powerful, so you must be very careful with them.

Lighting equipment check list:

1. Learn the operating principles of the lighting equipment before working with them independently. When in doubt, ask the teacher for advice. Make sure that the light is not switched on before plugging in the mains cable.
2. Place the light correctly, use a stand that can carry the weight of the light, secure the fastening gear (right hand rule), and use sand bags.
3. The studio is often dark or dim. Place the electric cables in such a way that nobody will stumble over them. If needed, you may tape the cables onto the floor. Watch your step when the studio is dark.
4. Wear gloves because some lights get hot in an instant. Turn off the light when you are done using it. Do not place flammable material close to a light. You can check the operating instructions on the manufacturers' web pages. Use filters intended for video shooting only.

5. Using the lighting truss: Check first that there are no people or equipment underneath the truss. Finally, turn off the fuses and turn the knobs in middle position.
6. If you mount lights on the truss, always secure them with a wire.
7. You can also use tennis balls at the end of protruding parts to soften the blow if someone runs into them (for example at eye level).
8. When shooting video elsewhere, always check the fuses and take the necessary precautionary measures before shooting. Make sure that you have a fire blanket at hand.

Moving and using video equipment

1. Make sure that you know how to use the equipment independently. When in doubt, ask the teacher for advice.
2. Most of the heavy equipment is kept on the storage room's shelves and underneath them. There are boxes and a cart in the storage room for moving the equipment. Make sure that the items in the boxes do not bounce around and that the boxes are not too heavy to handle.
3. Keep the trail clear from the shelves to the door so that you can work safely, and use the stepladder if needed.
4. If you use a van, make sure that the equipment will not fall or move when you are driving the vehicle. Reserve plenty of time for packing the equipment wisely and safely.
5. Dry up and clean the heavy equipment. Open the boxes if the contents are wet.
6. The concrete floor of the storage room is slippery if there is water or snow on it.
7. Return everything that you borrow and check that nothing is broken.
8. Report possible defects or shortcomings to the teachers without delay.

MODEL CONSTRUCTION F1052

The model construction studio is used for working wood-based, plastic-based, and other model construction materials with machines and hand tools. The teachers and laboratory engineer will instruct you on using the machines and equipment.

If you intend to work with computer-aided machinery, you must receive proper training. This is possible on basic courses. The laser cutter and milling machine may only be used under a teacher's supervision. Note that some 3D printing materials require the use of an exhaust fan. Monitor the printing process to ensure safe operation.

You must wear gloves when using the SLS printer until the post-processing has been completed. When using other chemicals, follow their respective safety regulations. You must also keep the work environment clean and store the materials correctly, because some chemicals react with humidity or sunlight.

- **Work under an exhaust hood** when using glues, putties, and other chemicals containing solvents and when using a hot-wire cutter, Styrofoam cutter, or a vacuum forming machine. **Start the exhaust hood fan** with the time switch next to the door.
- Switch off all the electric devices when you are finished.
- **Vacuum your work site**, do not use compressed air to blow it clean.
- Follow the guide's general instructions.

WOODWORKING/MACHINERY F1058

The machines in the machine room are only intended for wood-based materials. Training on the use of the machines is provided on basic courses. To ensure safety, you must learn to use the machines properly, work only when you are not tired, and use necessary protective devices. Tie you hair if it is long. Do not wear hanging jewelry or clothes to avoid getting them caught in the machinery. Using the woodworking machines requires teacher or lab engineer supervision.

You must always wear acoustic earmuffs in the woodworking and metalworking rooms when the machines are on. Wear eye protection when using a drill, a band saw, a radial saw, a rotary planer and always when your eyes are at risk of injury. **You must never wear gloves when working with the machines.** Gloves impair you precision and cause dangerous situations. Machine-specific safety instructions are available in binders located in the woodworking room.

Using the woodworking machines always involves a fire hazard. You must stop the machine immediately if something gets stuck between the blade and the machine body. Contact the lab engineer or your teacher.

The sawdust removal system turns on automatically when you start using the machine. The system cleans the filters automatically when you turn off the machine. When cleaning is in progress, **a red indicator light on the wall is lit**. Wait for the light to turn off before restarting the machine. The cleaning takes approximately sixty seconds.

- Use a vacuum cleaner or brush to clean your spot. **Do not blow the dust away with compressed air**.
- For safety reasons, do not leave unfinished works or materials on the floor.
- Follow the guide’s general instructions.

SURFACE FINISHING F1059

- Remove grinding dust from the works before taking them to the paint shop.
- Always turn on the painting cabinet ventilation when you finish surfaces. The switch is by the door.
- The paint shop is only meant for surface finishing, not for regrinding or other such work.
- If possible, move the finished objects immediately to the drying room and turn on its ventilation system.
- The tools for handling water-soluble surface finishing materials can be washed in the sink. Do not pour solvents down the drain.
- Oil-bearing finishing materials and the related tools create a self-ignition hazard. The safest way to get rid of the used tools is to fill a plastic bag with water, put the tools in, and close the bag.
- Surface finishing agents must be kept in the ventilated cabinet adjacent to the painting cabinet. Make sure all the containers are securely closed.
- Follow the guide’s general instructions.

METAL F1067

The space is small, so it is imperative to keep it tidy and clean. Furthermore, the space has no acoustic insulation, so you must use eye and ear protection also when others are working.
To keep the place clean and to avoid sparks and noise, avoid using an angle grinder.
Use gloves to avoid cuts by sharp metal edges. Cutting fluids are used because of shavings when drilling and sawing. Keep this in mind if you have allergies.
When you are done, replace the tools and clean the work surfaces and floors. It is essential to keep the floor clean to prevent people from sliding and falling in a small space full of sharp metal objects.

WELDING F1068

Always turn on the exhaust fan when welding and working with fire because basic ventilation is not sufficient to remove the welding gases and nitrogen oxides. **Never weld without a mask.**
The oxygen and acetylene bottles are equipped with a heat-resistant glove. Do not take it away from the bottles or use it for any other work.

GRINDING F1069

The space is small, so it easily gets filled with noise, sparks, and dust. Use appropriate protection.
Do not grind aluminum, as it may clog the grinding wheel and break the equipment.
Grinding wheels must be straightened regularly. The clearance between the wheel and the work surface must not exceed 5 mm. When the clearance is larger, it is forbidden to use the machine until the wheel has been straightened and the clearance set.
Grinding wheel colours:

- gray: for normal steel
- green: for hard metal
- red and white: for high-speed steel.

CERAMICS F1062

Many raw materials used in ceramics may pose a health hazard in careless hands. Clay and glazing dust may cause lung disease and cancer. Currently sold glazing materials should not contain toxins such as lead, cadmium, or uranium, but you should always check the product information and instructions of use.

The best way to protect yourself against dust and solvent vapours is to **wash the work surfaces and floor before and after work** using a damp cloth.

Use safety gloves when you mix glazing material, paint or glaze works, or clean the room. When handling clay, use gloves if you have broken skin or wounds. The bacteria in the clay may create an inflammation hazard. Make sure your tetanus vaccination is still valid.

Wash your hands, nails, and nail grooves after work to minimise the risk of exposure. Avoid skin contact especially with glazing material and oxides.

Use a face mask and a fume hood when mixing powder into a glaze. Always keep the fan on when spray glazing inside a fume hood. Dried glaze can be reused by adding water to it and by sieving the glaze.

Recycle dried-up clay. Collect the dried-up bits and pieces into a vessel containing water. When the clay has become completely soft, pour out the extra water and spread the clay evenly into a five-centimeter layer on a fibreboard or plasterboard. The clay cures more evenly if you turn it after 24 hours or so. After a few days you can work the air out of the clay, and it is ready for use. You are free to use dried-up clay that other have left behind.

Do not work dried-up clay because it generates dust.

Firing clay: Study the firing instructions carefully. Turn on the exhaust fan, do not stay in the room during firing, and keep the door closed. Clay contains organic substances that dissipate during firing. Carbon monoxide may form in the beginning of the firing process. After firing, do not open the kiln before the temperature has dropped below 200º C.

Be careful when using the kiln. Save energy by heating it only when fully loaded. If you do not intend to glaze your work, you can skip bisque firing. Instead you may fire the work directly at a higher temperature.

What you need: Safety gloves, working clothes or apron, personal wooden and metal shaping tools. Different materials and working methods require different protective equipment. Ask the teacher what protective equipment you need in your work – **and use it**.

PLASTIC COMPOSITION F1066

Objects and materials left on the tables typically collect dust in the plastic composition room. Bits of clay drop on the floor from the rack when clay models are made. When people walk in the room, the dried-up bits turn to dust that gets airborne. Clay and stone dust accrue in the lungs. Plaster and wood dust eventually leave the body, but they involve the risk of exposure and allergy. Dust also irritates the respiratory organs, eyes, and skin. At the end of the session, always remove the clay bits from the floor using the mop and vacuum cleaner available in the room. You can remove wood dust by brushing, vacuuming, or damp wiping. The cleaning personnel wash the floor with a machine, provided that there are no racks and works on it. Keep the shelves tidy and place your works on them to make cleaning possible.

During the basic course on plastic composition you are to make a work safety guide based on instruction and deliver it to the teacher in charge.

Hot work, welding, smelting, soldering, and grinding create a **fire hazard** and therefore require the presence of the teacher or lab engineer.

Use solvents only by the exhaust wall of the surface finishing room (F1059) or outside, if possible.

Since concrete is an alkaline substance and therefore corrosive, you must wear safety gloves when casting it.

Some pieces of equipment, for example the grindstone, require the use of water. Remove the water after use, because the metal parts may rust and whetstones may get soft.

Finally, **study** also the instructions and practices concerning the other spaces used on the plastic composition course, namely the **woodworking, surface finishing, and metalworking** rooms.

TEXTILE PRINTING F3094

A clean studio and correct working methods enable you to work safely and successfully. Note the following general and room-specific instructions:

- Do not bring food or drinks to the textile printing studio. Chemical dust may enter your body along with food.
- Return everything in its place.
- Clean the tools and the space when finished.
- Sweep immediately all colour and chemical spills off the floor and other surfaces with a damp cloth. Dried-up chemicals may get airborne as dust and become a health hazard.
- Use the fume hood and other required protection when handling toxic substances.
- Switch on the dyeing room's enhanced ventilation. In the evening and on weekends the printing room's ventilation can be switched on in the corridor, outside the coating room.
- Turn on the timers when you start and turn them off when you stop working in the dyeing and finishing room.
- Electrical equipment: Read the instructions on the wall. If in doubt, ask for help!
- Turn off all the electrical devices and lights when you leave.

PRINTING ROOM

- Hang the meshes to dry in their closet or beneath your printing bench on a newspaper (not on the floor).
- Return the squeegees to their metal cases in the washroom.
- Airborne dust particles spoil the fresh print: Wipe the dust off the shelves, side tables, and printing benches and remove all unnecessary items.
- Remove all cups, spoons, paintbrushes etc. from the sinks, clean them, and take them where they belong.
- Clean newspapers and other types of paper belong to plastic cases beneath the printing benches.
- Take the trash to the large, round plastic buckets.
- When finished, place all your items in your box on the bottom shelf of the printing bench.

- Use a separate spoon for each colour and printing paste.
- Use a heat gun on a non-combustible surface and under an exhaust fan.

WASHING AND EXPOSURE/COATING ROOM

- Take the stencil cleaning and removal chemicals to their proper places. Having cleaned the brushes and sponges place them next to their respective chemicals.
- Take the exposure tools to their proper places (photo emulsion, pens, scoop coaters, and spoon).
- Handle the exposure glass with care and clean it, if dirty.
- Do not leave your own coatings in the exposure room, keep the tables and shelves clean and tidy.
- Airborne dust will damage a recently coated mesh. Remove all needless items and wipe the tables clean.

FINISHING ROOM

- Mangles and steam press: Read the instructions on the wall. If in doubt, ask for help!
- Run the mangle clean in the end of the day if it has been used.
- Clean the bottom of the iron if you smeared it.

DYEING ROOM

- Mix small amounts of colour into larger amounts of corresponding colour. Use lidded containers.
- Always mark the content of the container.
- Remove spoons from the containers at the end of the day.
- Place the items neatly on the shelves to dry (not on top of one another).
- Place kettles on their shelves and spoons, paintbrushes, mixing sticks etc. in their right places.
- Tipping pans, washing machines, and steamers: Read the instructions on the wall. If in doubt, ask for help!

- Clean the steamer if the water looks cloudy or at least at the end of the course.

COLOUR KITCHEN

- The measuring glasses belong to the colour kitchen.
- Place the powder dye and chemical containers in the right way so that people can see their contents/labels.
- Place the printing inks in their places with the labels in front. Markings on the edge of the shelf indicate the colour or the chemical in question (e.g. masking, transparent, special colours).

The safety data sheets are in the printing textile bookshelf.
Hazardous waste is collected to the colour kitchen to wait for further delivery.

STRUCTURING F3111
FINISHING/IRONING F3116

To ensure work safety in rooms F3111 and F3116, you must **use the equipment correctly, use appropriate working methods, and keep the workrooms tidy**. Regular visitors will receive introductory workshop training on the rooms and the equipment to facilitate the use of the equipment and to make sure that they are used for the right purpose. You are not allowed to work in the rooms without this training.

The machines and equipment have protective equipment. Always check that nothing is missing or in a poor condition and notify the teachers if you find deficiencies. **Do not remove the protective equipment from the machines** (fingerguard, eye shield). Never use special equipment such as the straight knife cutter, hand cutter, air compressor, and special sewing machines without proper training.

Because work with industrial sewing machines involves a risk of getting caught in them, you must always wear appropriate clothing. You are not allowed to wear hanging jewelry or clothes and they must not contain hanging belts or laces to avoid getting them caught in the machinery. Tie you hair if it is long. Do not bring outdoor clothing, bags, backpacks, or other such items in the passageways or next to the machines. Always keep them in the classroom or at a coat rack. **Do not bring tableware in the rooms.**

Some machines do not make much noise, so you may not notice that they are on. **When finished, switch off the machine or unplug it.** The last person leaving the room must also switch off the MAIN POWER. There is no need to touch the power rails. If you use extension cords, make sure that people will not trip over them. If you need to reach something high up, get the A-ladder from the storage room.

If you detect a fault in a machine, notify the personnel as soon as possible. Put a note on the machine indicating that it is faulty. **Follow the written instructions when in a work area or when using a machine.** If necessary, ensure safety by giving proper instructions to a person who is misusing a machine.

Textiles can be recycled in the rooms. Place your leftover materials in the boxes under the cutting table so that others may use them. You may also use textiles left behind by others.

The most common accidents are burns in ironing and pinpricks in sewing. In case of an accident, the first-aid kit and fire extinguishing equipment are in the ironing room. If more extensive care is needed, contact the YTHS student health service or Lapland Central Hospital's Emergency Clinic. Their phone numbers are next to the first-aid kit. **Always report accidents to the teachers.**

When finished, clean the work area and return the items and equipment to their places. The last one leaving must check the overall condition of the room and make adjustments if needed. To tidy up your work area, use the cleaning equipment (brush, magnetic squeegee for needles) and device-specific equipment (sewing machines, ironing equipment).

When you are finished or the last one to leave the space, see to the following:

1. The irons are off (unplugged) and the steam press is switched off (F3116).
2. The sewing machines have been turned off and the MAIN POWER SWITCH is off in room F3111.
3. Clean the sewing machines of dust and leftover textiles and cover the machines. Clean also other devices and spaces that you have used.
4. Take all things to their right places, including the dummies.
5. Turn off all the lights.
6. In case a machine does not work properly or something else is wrong

    → Contact the personnel and write the fault information in the form on the bulletin board.

WEAVING F3099

Keep the weaving studio tidy and clean to ensure work safety and a pleasant atmosphere. Working with the loom generates dust and trash that you must clean every day after work using a brush or a vacuum cleaner. It is also a good idea to occasionally clean the loom with a damp cloth.
Do not collect needless gear around the loom. Pick up the things you do not need and put them in your locker.

When finished, remove the fabric from the loom (hand loom or computer-controlled loom). Vacuum the loom very thoroughly starting from the linen fabric. Clean the area surrounding the loom and place the loom parts on the side frame or the harness. Take the reeds and other tools and utensils back to the storage room. Remove all your personal items from the loom. When finished, vacuum the floor under and around the loom.
Return the items you have borrowed to their proper places. Check also that the tools and utensils are where they should be.

Oil regularly the bobbin winder's cogwheels and the revolving metal parts of the loom and warping mill so that they run smoothly and silently. Polish the shuttle surfaces with fine-grit sandpaper if they have become rough. Preventive maintenance keeps the equipment in good condition.

Training on electrical equipment such as the TC-1 device, computer-controlled loom, overlocker, sewing machine, and bobbin winder is given during the course lessons. Should you notice that something is broken, report it to the personnel at once. Turn off all electric devices and computers when you are done.

The TC-1 loom operates on electricity and compressed air. The operating instructions are on the wall of the weaving studio near the device. When you are done, use compressed air to clean the dust attached to the TC-1, especially the heddle rods. Turn off the device, the computer, and the compressed air supply. Vacuum the floor under the loom. If you remove the fabric from the loom, tie new starting knots for the next weaver.

Fire extinguishing equipment and the first-aid kit are on the wall of the studio. In case of an emergency, contact the personnel immediately.

PAINTING F4043

(These instructions apply to all painting studios of the Faculty or Art and Design.)

In painting, work safety concerns the binding agents and pigments of paints. Make sure the ventilation works when painting with oil and acrylics. The air stays cleaner in tempera painting, but there are risks involved when handling dry pigments.

Pigments pass through the skin if you have wounds or abrasions or if the paint contains certain solvents. Some pigments may irritate the skin and cause inflammation or allergy. Avoid skin contact and keep your hands clean. Some pigments accrue in the body, which may lead to toxic or some other adverse effects. Pigments pose the greatest danger when they are in the form of dry powder that can enter your body through the respiratory or digestive tract. The easiest way to absorb fine-grained pigments is through the lungs.

Always store pigments in the designated glass cabinet. Keep the cabinet clean and store only pigments in it. Remove the pigment gently from the container. Each container is to have its own spoon so that you do not need to tap them clean. Mix pigments immediately with a small amount of water in palettes made of film or tealight containers, for instance. After that, it is relatively safe to work with them.

Wipe the kettles, measuring glasses, and paintbrushes as clean as possible before washing them. This prevents the sink strainers from clogging. Keep primers in plastic containers so that they will not dry up and stick to kettles. Keep primers, eggs, and ready-made emulsions in the fridge.

Clean your paintbrush in the designated barrel. Instead of entering the sewer, the paint and solvents settle on the bottom of the barrel. Turpentine emulsions are hazardous waste. You must not let them leak into groundwater. There is a waste oil container in the priming room.

Put all papers and cloths containing solvents and oil into lidded trash bins.

It is easier to start working if you keep the **priming room (F4042)** tidy and clean. Clean your equipment and put it back where it belongs. Take the dried-up canvases off the floor and put

them on their shelves. **Turn off the hotplates after use.** Never use a hotplate for heating beverages!

What you need: textiles and stretcher bars, paintbrushes, palette, small lidded containers for mixing and storing colours, one-litre plastic containers for primers, and your own eggs for tempera painting. Use working clothes and, if needed, protective gloves and headwear.

Note! Remove your works from this room and from the storage room on the last week of May at the latest. Thereafter, the remaining works will be disposed of.

DRAWING F4040

Charcoal dust accrues on horizontal surfaces in this room. Wrap a damp cloth around a squeegee and wipe the charcoal dust off the floor around your easel. Do it right after the session to reduce everyone's exposure to charcoal dust. **Keep the room in order and remove all excess materials. It makes the room is easier to clean and more comfortable to work in.**

Be extra careful when working with fixative. **Apply fixative in front of an exhaust wall only (priming room, F4042).** After applying the fixative, let the work sit there for a while to get rid of all the fumes.

What you need: charcoal sticks or pencils, chamois leather, charcoal eraser, ordinary eraser, fixative, and working clothes.

Note! Remove your works from this room and from the storage room on the last week of May at the latest. Thereafter, the remaining works will be disposed of.

PHOTOGRAPHY F4065

SAFE AND ENVIRONMENTALLY FRIENDLY WORKING METHODS

The darkroom has two types of sites: dry and wet. The dry sites are meant for processing negatives, exposing, and post-processing finished photos. These include the post-processing room's tabletops – especially the light table – and the darkroom's enlargers. Wash and dry your hands before you start working on a dry site to avoid smearing the equipment, negatives, and photographic papers with chemical stains in your hands. The wet sites, in other words the steel sinks, are meant for developing films and photographs.

You must buy your own photographic chemicals. Use the chemicals prudently and economically. Work in pairs or in groups so that you only need one sink. A smaller area of evaporation means cleaner darkroom air. Should you have to work alone, use small 0.5-litre trays.

Organise your work. Try to use the chemicals efficiently, do not waste them. Dilute developer remains usable only two days in a bottle. After that, it fails to bring out the contrast in your photos. Diluted stop bath and fixer will remain usable for a few weeks depending on how many copies you make. You can check the freshness of the fixer from the clearing time of the film base.

Squeeze the air out of the bottles because the quality of the chemicals deteriorates when they are exposed to air. Do not use glass bottles. Note also that beverage bottles may let in oxygen. The best bottles are those in which the chemicals were bought. You are recommended to use the developer bottle exclusively for developer, and so forth.

Write your name, the contents, the date, and the needed amount of chemical on the bottles. Keep your own bottles in the closets next to the darkroom. When you do not need your fresh diluted chemicals, sell or give them to those who do. **If you cannot find a new owner for your liquids, do not leave them in the darkroom. Instead, pour them in the appropriate collection barrels and containers.**

Make sure you know where the eye flushing showers are in the darkroom so that you can find them in case of an emergency. Avoid skin contact with photographic chemicals. Wear safety gloves when developing films and prints and when diluting developer, stop bath, and fixer. When making prints you can also use tongs to move them from one tray to another. However, each chemical must have its own tongs, because alkaline developer gets spoiled by the acid in the stop bath or fixer. For the same reason, each chemical should have its own tray.
Protective creams are not recommended because they may irritate the skin when reacting with chemicals. When you are done, wash your hands thoroughly and apply moisturizing cream. If you leave your hands dirty, you will ingest chemicals when eating or smoking.
Plastic film containers can be used in painting and graphics for mixing and storing colours.

CLEAN AND DUSTLESS DARKROOM

The darkroom has an exhaust fan above the developing sinks. It takes the chemical vapours away from you when working at the sink. You should nevertheless do your best to enhance air quality. If you take a break, cover your chemical trays with lids or other trays. If you leave for a longer period, pour your diluted chemicals in lidded bottles or containers.
Sometimes you may be working in the evening or on a weekend when the building's ventilation is off or turned down. In this case, switch it on and select the desired operating time. The timer switch is in the storage room (F4072) by the door to the corridor.

One of the challenges concerning safety and functionality in darkroom work is dust emanating from chemical stains and shoes. The air is often dry, which generates static electricity and causes dust to adhere to negatives. Decrease the amount of dust by cleaning all chemical stains with a damp cloth, by wearing indoor shoes, and by covering the enlargers after your work is done. Remember to turn the enlarger off before covering it. Be careful when using compressed air. It may cause great damage when pointed at someone’s eyes or skin.

The cleaning personnel sweep the floors, but you will have to clean the tabletops and other surfaces. Clean all chemical spills immediately to reduce airborne contaminants. Dried-up spills appear as white stripes and spots on the walls. Water has evaporated from them and left behind hazardous developer and fixer dust that gets airborne. Always wipe these stains off the walls with a damp cloth.

RESPONSIBLE MANAGEMENT OF HAZARDOUS WASTE

Photographic chemicals are hazardous waste and must not be poured down the drain. The waste must be placed in designated barrels and containers. The more you sort the liquids, the cheaper their management will be. Separate the following: black-and-white developers, fixers, dyes (each in its own vessel), and cyanides.
Strips of film and other silver-bearing refuse are also hazardous waste. Throw needless specimens and strips of film in the darkroom's metal trash bins. **Always close the lid of the trash bin** to contain harmful vapours.

What you need in the darkroom: your own chemicals, negatives, scissors, pen, photographic paper, safety gloves, and notebook.

When leaving the darkroom, remember to remove your negatives from the enlarger. Turn off the enlarger and put a cover on it. Wash all your measuring dishes and plastic trays and clean up all spills. If you are the last one to leave, close all faucets, dry the steel sinks with a squeegee, empty the print washer, and turn off all the lights and devices.

ALTERNATIVE METHODS – POLYMERE, CYANOTYPE F4073

In photo polymer gravure, ImageOn gravure, and cyanotype processes the plate is exposed to a source of UV light. The exposing device is referred to as the vacuum frame. Stay away from the UV light when working. When you open the vacuum frame after an exposure, vapours caused by the hot lights may be released to the air.
When exposing a polymer or ImageOn plate, UV light only hardens the areas that the light can reach through the film. Other areas do not harden and therefore dissolve in water or in a diluted sodium carbonate solution. The dissolving parts generate an odour.
In the cyanotype process the yellowish emulsion turns grey after sufficient UV exposure. The development is done with water, in which the unexposed parts dissolve.

The repro room (F4074) also has a UV light that is used for hardening gravures. It is not as powerful as the one in the vacuum frame, but you are advised to pull a black veil around it before turning it on.

PHOTO STUDIO F4062

You are not allowed to use the studio unless you have been trained to use the space and its equipment. The studios must be reserved in advance.

The chains sometimes get stuck when using the paper backdrops. To fix the problem, straighten them carefully – using a ladder to reach them if necessary. To avoid stains, you must remove your shoes before walking on an extended backdrop. To avoid tears, secure the edge of the paper to the floor using tape or weights. When you are done, roll the paper back up as steadily and straight as possible.

Self-made light-directing flaps (barn doors) are not recommended for fire safety reasons. Plastic screens will melt if placed too close to the hot lamps. Keep colour screens at a safe distance from the light source. You can attach them to a separate stand or ask your assistant to hold them.

When shooting, there are wires crisscrossing the floor and lights high up on stands that are often a bit shaky. You must therefore be extra careful to avoid knocking the lamps down. Handle the hot lamps with care: When lowering the light stands, make sure they do not slip down by accident, because the shock may damage the fans. When you are done, turn off the lights and let the cool for a moment before disassembly.

STUDIO WORK IS TEDIOUS AND EVEN BORING WHEN YOU ARE ALONE. HAVING A HELPFUL ASSISTANT IS LIKE MONEY IN THE BANK OR LIKE THE MOST PERFECT SHOT. YOU CAN NEVER OVEREMPHASISE THE VALUE OF COOPERATION.

When leaving the studio, make sure that all the items are where they belong and that you are not leaving behind any of your own gear.

What you need in the studio: a room reservation, plenty of time, a camera, an exposure meter, an assistant, and a good plan of action.

You can advance safe and environmentally friendly work practices by using solvents as sparingly as possible and without skin contact. **Ventilation** is located at the back of the room. Use the tables in that area when vapours or particles are produced in your work. The hotplates and glass plates have **spot ventilation** above them. When using the hotplate, heat the copper plate first and apply the printing ink thereafter. These plates are also used for applying priming waxes.

Clean the tiles and glass plates immediately after use. Wash the copper plate with cooking oil first and then with a mild liquid detergent. Pre-clean the glass plates on which colours are mixed and rolled. Use a piece of cardboard, an old-fashioned razor blade, a putty knife, etc. Finish the task using newspaper and baby powder or chalk powder.

Use solvent-resistant hand protection, for example nitrile gloves. Wear safety gloves also when applying printing ink. Keep the expensive nitrile gloves clean by covering them with disposable ones.

Wash your hands with cooking oil first and then with a mild liquid detergent. You can also clean them with a mixture of liquid detergent or tall oil soap and coffee grounds. Before you start working, apply protective cream on your hands to keep them clean. You can also use the ecological and effective hand detergent available in the room.

If you spill iron chloride on the table or floor near the tile etching sink, wipe it off immediately with a damp cloth. Dried-up iron chloride gradually turns into dust and is released to the air. The airborne dust irritates the respiratory tract and eyes. Always wear acid-resistant gloves when handling iron chloride. If the substance ends up in your eyes, flush them for 20 minutes.

The resin used in aquatint and lithography may cause allergic skin and respiratory reactions. **Watch closely the teaching demonstration** on how to dust as effectively as possible without letting the particles spread around the room. The procedure must always be carried out in the ventilated dusting room. In aquatint dusting you must wear a personal respirator and safety gloves, preferably also a smock and a hair cover. Use a damp sponge or cloth to clean residual

resin dust. Do not use a brush, because it sends the dust back to the air. Keep the door to the dusting room closed to confine the dust.

When using acrylic or wax spraying in aquatint, you need protective devices and you must do the work in a **fume hood** – otherwise the fine particles will get airborne and enter your lungs.

When you are done, place the colours in their ventilated closet.

When you are the last one to leave the room, check the following:

1. The press blanket is not squeezed between the parts of the equipment.
2. The container lids are closed and the items are in their closets.
3. The etching agent is in its storage container.
4. The hotplates are off and unplugged.
5. The rollers and glass plates are clean.
6. The room as a whole is in order.
7. The lights are off.

What you need in metal graphics: intaglio printing paper for proofing, safety gloves, personal respirator, and disposable gloves. You can normally buy copper plates from your teacher. The graphic arts room is also used for woodcut art and carborundum printing.

HAZARD SYMBOLS

E

Explosive

May explode when exposed to a flame or may be more sensitive than dinitrobenzene to shocks or abrasion.

O

Oxidizing

Substances that create an extremely heat-intensive reaction with other, especially combustible substances.

F

Highly flammable

Liquid substances and products with a flashpoint lower than zero.

F+

Extremely flammable

T

Toxic

May cause serious, immediate, or long-term adverse health effects when inhaled, swallowed, or absorbed through the skin.

T+

Very toxic

May be fatal.

Xn

Harmful

May be hazardous to health.

Xi

Irritant

May cause skin or mucosal inflammation.

C

Corrosive

Substances and products that destroy living tissue on contact.

N

Dangerous to the environment

Substances that are toxic to aquatic animals or substances that are toxic to aquatic animals and are persistent or bioaccumulative.

All products that have one of the above symbols are regarded as toxic waste. Their empty containers and bottles are also toxic waste. Collect and separate these items for further delivery.

SAFETY GLOVES

CHEMICAL RESISTANCE OF SAFETY GLOVES

Glove material	Substances that can be handled
Natural rubber	Alcohols (ethanol, methanol, propanol, butanol), ketone (acetone), ethyl acetate, polyglogs, weak acids (5–25% sulfuric or hydrochloric acid), synthetic detergents, and water
Neoprene	As above. Also cyclohexane, White Spirit (Varsol, mineral spirits), hydrocarbon oils, animal and plant oils. Short-term handling: chlorinated solvents, sulfuric and hydrochloric and other acids, iron chloride, sodium hydroxide (caustic soda), and potassium hydroxide
Nitrile rubber	Alcohols, White Spirit, cyclohexane, turpentine, aromatic hydrocarbon oils, synthetic oils, animal and plant oils, tar, resin, petrol, and other weakly aromatic hydrocarbons. Short-term handling: sulfuric and hydrochloric acid. Unsuitable for: ketones
Butyl rubber	Alcohols, ketones, sulfuric and hydrochloric and other acids, iron chloride, sodium hydroxide (caustic soda), and potassium hydroxide. Short-term handling: chlorinated hydrocarbons, toluene, White Spirit, cyclohexane. Unsuitable for: petrol and oil
Fluoro fubber (Viton®)	Withstands most of the above-mentioned substances. Unsuitable for: ketones and ethyl acetate
PVC	Resists poorly or not at all the above-mentioned solvents. The gloves are suitable for wet conditions, ordinary washing, and cleaning with synthetic detergents. Short-term handling: alcohols
Polyvinyl alcohol	Chlorinated and aromatic solvents (toluene, xylene). Difficult to use because water and solvents mixed with water break down polyvinyl alcohol quickly. Water-soluble. Unsuitable for: acids and iron chloride
Polyethene	Unsuitable for handling the above solvents because polyethene withstands them poorly, except for ethanol. Disposable polyethene gloves can be used in wet conditions and for handling food

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USES OF SAFETY GLOVES

Use	Properties
Handling of hazardous substances	See previous table
Protection against small wounds and bruising	Leather gloves
Protection against larger punctures and cuts	Gloves reinforced by metal strips or studs
Protection against vibration	Relatively thick textile or leather gloves
Welding	Long-sleeved leather gloves
Gas equipment handling	Flame-resistant gloves
Metal casting	Relatively thick leather gloves or flame-resistant gloves
Patinating	Neoprene gloves

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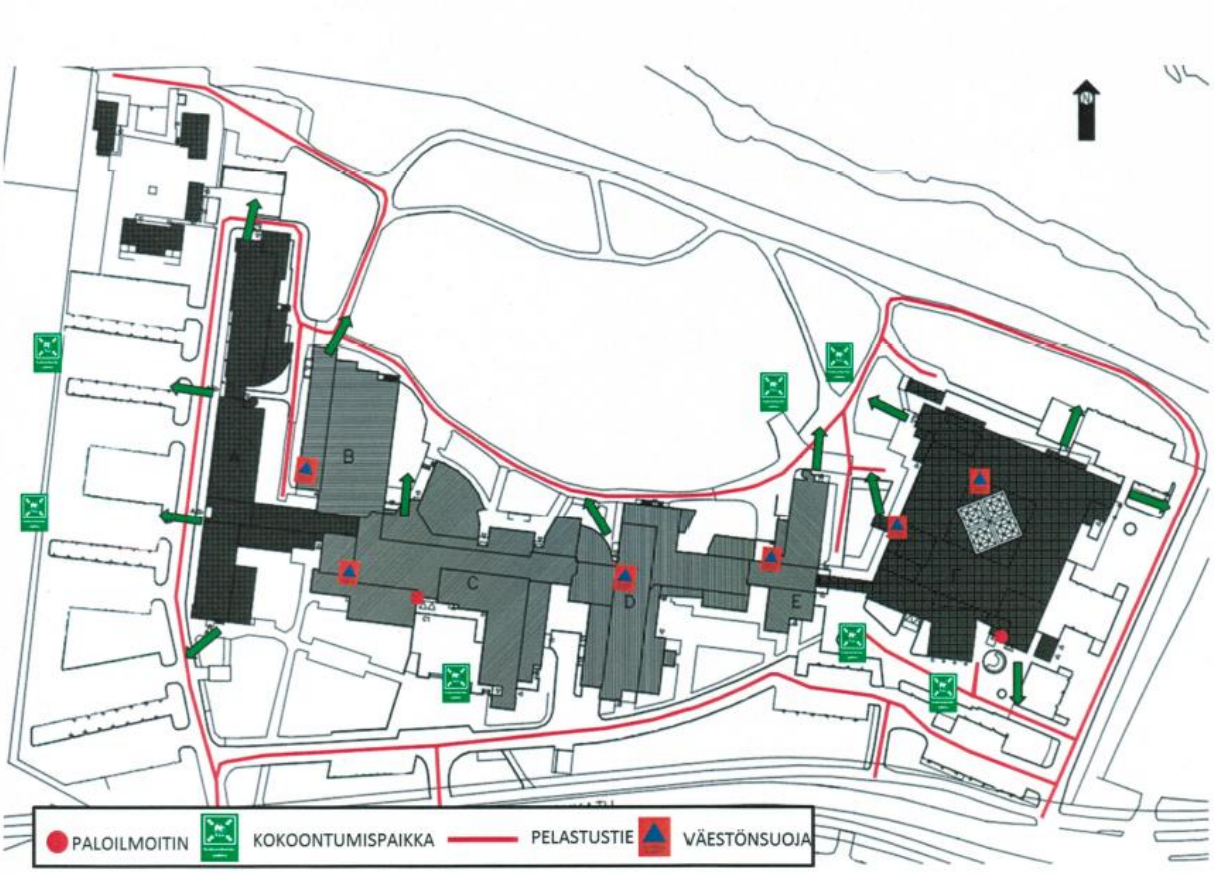
Emergency exits and places of assembly



Fire alarm Place of assembly Rescue road Bomb shelter

⇨	exit road (other than that near the place of assembly)

WORK SAFETY SOURCES

Product labels and safety data sheets are the primary sources of work safety information. **Read the package markings and labels before using a product.**

The safety data sheets (SDS) of chemicals can be found on the Internet as PDF files. Use the chemical's name as the search word followed by "safety data sheet", for example: "sikaflex 221 safety data sheet".

The SDS has information on storing and discarding your product safely as well as first-aid instructions, among other things. It also lists the measures that you must take to avoid exposure. For example, you may be instructed to use a fume hood or ventilation. You may also be recommended to use a certain type of personal respirator. If a chemical accident occurs, follow the first-aid instructions of the safety data sheet and make sure that when you get to the first-aid station or doctor you know at least the name of the chemical that you used.

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