Safety Rules for Students at UCT Prague

Preamble

This document stipulates binding rules for the protection of life and health of natural persons that take part in regular teaching sessions organised at UCT Prague or in study stays taking place at UCT Prague workplaces (hereinafter referred to as 'students'). Following the instructions as referred to in this document is one of the basic obligations of every student within the meaning of Article 4, Para 1, letter a) of the Study and Examination Rules of UCT Prague.

This document is without prejudice to students' obligations set out in other internal regulations to ensure OHS/FP during specific activities for which it is necessary to attend a specialised training session (eg work with pressure gas vessels, pressure stable vessels, with sources of non-ionising radiation, generators of ionising radiation etc).

Basic obligations when on the premises of UCT Prague

All students are obliged to:

- Attend a training session on occupational and health safety related to presence at workplaces and in buildings of UCT Prague and when undertaking specific activities connected to lessons (this concerns students in the first year of Bachelor, follow-up Master and Doctoral studies).
- Observe regime measures set out for UCT Prague buildings, research centres and spaces assigned for practical training or practicals.
- Observe instructions and orders aimed at preventing risks given by UCT Prague employees (eg teachers of the given subjects and courses) or on safety signs.
- Mind their own safety, behave responsibly and considerately to other persons present in UCT Prague buildings.
- Inform about an injury they or another person sustained (if they witness such a thing) that occurred in a UCT building or during classes. The information is notified to:
  - employees at the Department of Safety and Risk Prevention (Building B, rooms 66 and 67 - next to the main reception in Building B), or
  - anyone of the reception staff, or
  - employees at the department where the student attends a course or is on a study stay.
- Inform teachers of individual subjects and practicals about any, albeit minor, injury or sickness that occurred during lessons, in particular when using chemical substances and mixtures (eg laboratory work, research field work etc).
- Inform the Dean's Office of the faculty where they study about any change in or loss of medical fitness for study.
- Give premedical first aid to an injured person or call an ambulance.

In UCT Prague buildings it is prohibited to:

- Smoke in UCT Prague premises (ie not only in buildings but also outside), drink alcohol and use addictive substances as well as enter UCT Prague premises while under their influence.
- Use open flame and start a fire unless such activity is a specific part of a lesson (eg practical lessons, laboratory work).
- Bring animals to UCT Prague buildings that might put other people at risk by attacking them and transmitting infectious diseases or parasites (in particular, dogs). This does not apply to assistance dogs accompanying vision impaired individuals.
- Bring hazardous objects to UCT Prague buildings – arms, ammunition, or a part thereof, non-lethal arms, stabbing, cutting or impact weapons.
- Run, roller-skate, ride scooters and other similar vehicles.
- Touch the inventory and instrumentation in laboratories, manipulate with it or interfere with its operation unless they have the necessary professional skills and were authorised to do so by a responsible person.
- Climb ladders or climb to places that are 1.5m or higher above the ground and which are not protected against people falling; lean out of windows or balconies.
- Act in an aggressive, violent, consciously dangerous or vulgar manner.

Note for pregnant students

Pregnancy causes changes in the woman's overall health status (ie physical and mental) due to which pregnant women become more sensitive and vulnerable to the affect of risk factors of working conditions. Taking into account the abovementioned fact, the university is aware of its duties to ensure the protection of health of pregnant students and the healthy development of the foetus.

The fact that a student is pregnant is confidential information that neither the university nor any employee of the university is entitled to explicitly demand. Consequently, the university must inform the students that from a legal point of view, pregnancy is approached from two angles:

1) The first aspect **is the right to privacy and protection of personal data** of the woman within the meaning of Regulation (EU) 2016/679 of the European Parliament and of the Council on the protection of personal data (General Data Protection Regulation). In this sense, information about pregnancy is private data as it constitutes information about the woman's health status.

2) The other aspect is **the right of the unborn child (foetus) to life** and healthy development which is enshrined in Article 6 of the Resolution of the Presidium of the Czech National Council on the declaration of the CHARTER OF FUNDAMENTAL RIGHTS AND FREEDOMS as part of the constitutional order of the Czech Republic (Art. 2/1993 Coll.), which stipulates that 'Everyone has the right to life. Human life is worthy of protection even before birth.'.

UCT Prague is obliged to ensure that the given provisions of the abovementioned legal regulations are observed, while the absolute priority is the protection of human life and health. In order to ensure the conditions of the protection of health of pregnant students and employees, the rector has issued Decree No A/V/961/7/2024 with which all female students must become acquainted upon the start of their studies at UCT Prague.

Instructions for the use of electrical appliances

- Follow the instructions for use set out by the manufacturer.
- Use only appliances provided by UCT Prague (ie it is prohibited to use own electrical appliances at UCT Prague workplaces, incl. portable heaters, electric kettles etc).
- Use the appliances only in designated areas and only for the purposes for which they were intended by the manufacturer.
- Touch only those parts of the appliances that are intended for their operation.
- Appliances intended for preparation of food and hot drinks must be supervised at all times while being used (if fat or oil is heated too high on a hotplate, it can catch fire, electric kettles may overflow and cause a short circuit etc).
- Heating appliances must be cleaned only after they have cooled down and in accordance with the manufacturer's instructions.
- Never touch the hot parts of electrical appliances (eg the hotplate, the heating element of the electric kettle when it's on etc).
- Never put metallic materials in a microwave – there is a risk of sparking or explosion!
- Do not fill the electric kettle with water over the maximum mark or below the minimum mark.
- Never immerse the electric kettle in water.
- Cordless electric kettles can only be used with the base plate and must not be filled when placed on the base plate.
- Do not disassemble electrical appliances and do not tamper with them.
- Do not expose electrical appliances to rain and do not use them in moist and wet environments.
- Do not use tools in an environment where there is a risk of fire or explosion (unless they have been designed for such environments).
- Do not use appliances without safety covers, damaged appliances, including power cords (damaged insulation), do not use damaged sockets, do not overload electrical appliances (they can be used only in accordance with the user manual and for the purposes for which they have been manufactured) etc.
- Unused appliances must be stored in proper conditions (in a dry place above ground or in a locked place, primarily out of reach of unauthorised persons).
- Use protective goggles, eg when shredding CDs/DVDs in shredding machines intended for it (a risk of flying splinters).
- Never carry an electrical appliance by its power cord (electrical cable) and never remove the power cord from the socket by pulling on it. Protect the power cord from heat, grease and sharp edges.
- Keep the electrical appliances without defects. Damaged appliances must not be used until they have been repaired. An appliance that has been exposed to water must be safely unplugged and checked by a service technician.
- Electrical appliances such as electric kettles must be placed outside of the base plate when not being used.
- Do not interfere with proper air circulation of the appliance (do not cover the vents) and make sure the appliance does not overheat.

- Electrical appliances can be repaired only by authorised personnel (maintenance workers, service technicians) and using original spare parts recommended by the manufacturer.
- It is prohibited to use other accessories or parts than stated in the user manual!

Instructions for work in chemical laboratories

Before starting work in a chemical laboratory, each student must get acquainted with the rules of good practice when conducting laboratory work that are available as instructional videos at:

https://ebedox.cz/videa-o-spravne-praxi/

Instructional videos include the following topics:

- Signs and laboratory equipment
- Safety rules for work in a chemical laboratory
- Personal protective equipment
- Safety sheet
- Labelling of chemical substances
- Laboratory glassware and equipment
- Pipetting technique
- Work with burners
- Distillation
- Heating in a test tube
- Drilling of stoppers
- Putting out flammable liquids
- Liquidation of spilled liquids

When working in a laboratory, students must observe the following rules in particular:

- Get acquainted with the rules of operation and have their knowledge checked.
- Before entering a laboratory, wear the right clothing according to teacher's instructions. To work in a laboratory, it is necessary to:
  - have long trousers, a lab coat and closed toe and back shoes that are slip-resistant,
  - have hair and any dangling parts of the clothing tied back,
  - remove all jewellery, in particular rings, bracelets and watches,
  - do not wear contact lenses,
  - wear protective goggles, a lab coat, protective gloves and a shield if necessary.
- Learn about hazardous properties of the used chemical substances/mixtures that are listed in the safety sheets. Safety sheets must be available for students in the laboratory so that they can be consulted.
- Before starting work in a laboratory, get acquainted with the entire work procedure. If the student does not understand something, the teacher must explain the whole process to them.

- When doing laboratory work, follow the prescribed work procedure, do not deviate from it or adapt it arbitrarily. Work must be done in a precise manner and with maximum attention.
- Use personal protective equipment the whole time when working in a laboratory.
- Keep the working space in order and clean and only have the equipment prescribed for the given task and other tools necessary for carrying out the task placed there. All other objects must be stored away from the working space.
- Use the provided chemicals, equipment and material solely for the intended purposes and make sure they are not damaged or treated wastefully.
- When working with gas and electrical appliances, be extra careful and follow the teacher's instructions.
- All laboratory vessels and beakers containing chemical substances/mixtures must be labelled legibly and clearly with the name of the given chemical substance/mixture, and have a sticker with the symbol of the level of hazard of the given substance attached if applicable.
- All used chemical substances/mixtures must be stored in original containers. Alternative containers can be used only in case the original container cannot be obtained or its protective function ensured. If this is the case, the alternative container must be labelled properly with the safety symbol and an unerasable and unremovable label which has the name of the chemical substance/mixture and its chemical formula, the name of the person who used the alternative container and the date when it was used on it. A chemical substance/mixture placed in an alternative container must be stored out of reach of unauthorised persons, or in a manner that ensures it won't be mistaken for another chemical substance/mixture.
- The laboratory must be kept in order and clean and personal hygiene practices must be observed.
- The teacher must be informed about any injury or sickness.
- If a used chemical substance is spilled, an instrument is broken, shards occur or any other accident happens, the teacher must be informed.
- After the work is completed or interrupted, the working space must be cleaned, the worktop wiped with a wet cloth, all bottles with spare chemicals closed properly and stored in a designated place.
- Always wash hands with water and soap when leaving the laboratory.

It is strictly prohibited to:

- Break the laboratory operating rules.
- Allow entry to the laboratory to unauthorised persons or persons with fully or partly restricted legal competence.
- Work with chemical substances without first getting acquainted with the safety sheets and work procedures for the given task.
- Manipulate with chemical substances or samples, sniff or taste them without the teacher's consent.
- Manipulate with pressure vessels, gas valves and other hazardous equipment without a prior training and the teacher's consent.
- Take any chemical substances/mixtures out of the laboratory, offer, donate or give them to other individuals.
- Pipette a chemical substance by mouth.

- Eat, drink, chew a gum, smoke and use cosmetics in the laboratory.
- Bring objects to the laboratory that are not strictly needed to carry out the given task.
- Block escape routes, aisles, access to fire equipment, electric meter, switches and other electrical equipment with objects or material.
- Transport vessels and containers used for chemical substances on the back or in the arms, or push or pull them on the floor or slide them.
- Transport corrosives in open receptacles.
- When working with flammable substances, use open flame or other sources of heat.
- Store chemical substances in food, drink, drugs or cosmetics containers.
- Use inappropriate, damaged or extremely dirty work equipment and personal protective equipment.
- Pour down the drain, pour together or throw into the rubbish bin any chemical waste without the consent of the responsible person or teacher.
- Elevate the working space or climb using unstable objects and objects intended for other uses (boxes, casks, chairs etc).
- Work hastily or perform activities in the laboratory that might lower the attention, such as listening to music on the headphones, making phone calls etc.

Rules for work with hazardous chemical substances or chemical mixtures

General rules

- When working with chemical substances, always use clean laboratory equipment intended for the purpose. Do not take solid chemical in your hands, use a laboratory spoon or spatula.
- Prevent contact of extremely oxidising substances and mixtures with organic substances.
- Prevent contact of alkali metals and alkali metal hydrides (including calcium carbide) with water.
- It is allowed to work with hazardous gases, vapours, fuming, irritant and odorous substances only in the hood.
- All liquids can be pipetted exclusively using special safety pipettes, or by a suction equipment.
- When working with substances in test tubes and open receptacles, the neck must be tilted away from the person's body and away from other individuals.
- Vessels containing chemical substances must never be left open. If a vessel gets contaminated after the chemical was poured out of it, the vessel must be cleaned with a cloth.
- Vessels are transported without a safety plastic net and must always be held using both hands. Vessels must not be transported only by the neck!
- When liquids are poured from reserve bottles or beakers, the bottle/beaker must be held in the hand so that the label is covered with the hand (and thus protected against staining).
- When vessels at heated over a burner or heating mantle, they must be watched for overheating. Boiling chips must be used at all times.

Highly toxic substances

- Generally, a toxic chemical substance is any chemical substance or chemical mixture whose chemical effect on vital processes can cause death, temporary incapacitation or permanent harm to human health or to animals or the destruction of plants.
- Highly toxic substances are chemical substances or chemical mixtures that, according to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (the CLP regulation), are assigned one of the hazard categories below:
  - Acute Tox. 1 / 2,
  - toxicity for specific target organs after single exposure category 1 (STOT SE 1)
  - toxicity for specific target organs after repeated exposure category 2 (STOT RE 1).
- Only persons with specific competence pursuant to Section 44b, Para 1 of Act No 258/2000 Coll., or persons that have been trained by a responsible person and have the appropriate necessary knowledge to perform the work safely can work independently with highly toxic substances.
- Students in Bachelor studies can work with highly toxic substances only after they have been trained (see above) and under the supervision of a responsible person (ie a person with required competence). Students who have completed their Bachelor studies in a chemistry field as a minimum can work with highly toxic substances independently.

Corrosive substances

- Corrosive substances can be used only in properly ventilated areas or in a hood.
- Use personal protective equipment to protect the skin on your hands and eyes (nitrile or butyl gloves and protective goggles).
- Corrosive substances must be stored in a dry, cool place. It is prohibited to store hydroxides together with acids!
- In moist environment, when exposed to certain metals, highly flammable hydrogen can occur, creating a risk of explosion.
- Containers must be sealed tightly to prevent leaking of corrosive vapours (suitable container material – polyethylene; do not store in metal containers).
- Mineral acids must not be exposed to strong bases, oleum, strong oxidising agents (eg hydrogen peroxide, potassium permanganate) or hypochlorite (eg bleach).
- When preparing corrosive solutions, always pour or add corrosive to water (liquid) while stirring continuously with a stirring rod (not with a hand!) and never the other way round!
- Prevent contact of hydroxides with aluminium, zinc and tin objects (hydrogen could occur).
- Spilled acids, in particular concentrated acids, must first be diluted with water, neutralised by sprinkling with a carbonate (sodium carbonate, calcium carbonate) or by pouring a diluted hydroxide solution on them, then washed with water or removed with sawdust, a cloth etc.
- To remove spilled nitric acid, perchloric acid and strong oxidising mixtures, do not use sawdust or other organic substances, but remove with inert materials such as diatomite etc.
- Prevent contact of strong oxidising substances and mixtures with organic substances (do not use them to clean laboratory glassware).
- When working with flammable liquids, occurrence of static electricity or mechanical or electric sparks must be prevented; when they get spilled, immediately switch off gas appliances, turn off electricity.

- Prevent contact of alkali metals and alkali metals hydrides (incl. calcium carbide) with water.
- When working with substances in test tubes and other receptacles, the neck must be tilted away from the person's body and away from other individuals.
- You can only work with hazardous gases, vapours, fuming, irritant and odorous substances in the hood or, to a limited extent, near other exhaust equipment (elephant trunks).

Instructions for liquidation (disposal) of chemical waste

- All waste such as products of chemical reactions, unreacted residues or contaminated reactants must be liquidated in accordance with the instructions provided in safety sheets of the given chemical substances, or according to instructions given by the teacher.
- Waste solvents must be stored in clearly labelled receptacles, after all residues of pyrophoric substances have been removed and neutralised.
- At workplaces, receptacles with waste must be stored exclusively in designated areas out of reach of unauthorised persons, and must be regularly emptied.
- Residues of alkali metals, alkali metals hydrides and solutions of organometallic compounds must be liquidated immediately.
- Alkali metals must be liquidated in the hood by solving in 96% ethanol.
- Alkali metal hydrides are liquidated based on their reactivity by solving in ethyl acetate or acetone.
- Substances that might cause fire or combust spontaneously must not be placed in waste receptacles.
- Flammable materials must not be thrown into receptacles for waste glass located by glass burners.
- Waste contaminated with oil (textile, sawdust etc) or flammable substances must be stored in closed tin receptacles.
- Only sufficiently diluted (at least 1:10), perfectly water-miscible solvents in the amount of up to 0.5 litre (one-off) and water solutions (at least 1:30) of acids and hydroxides and salts can be poured down laboratory sinks, laboratory funnels and other laboratory drains.
- Solvents that are not perfectly water-miscible, highly toxic and toxic substances, acids and hydroxides above the given concentration, explosive substances, substances releasing toxic or irritant gases upon contact with water, acids or hydroxides must not be poured down the drain.
- Spilled mercury must be collected and liquidated with powdered zinc or sulphur. When working with liquid mercury, filter half facemask with an A1HgP3P protective filter against gases and polychloropene or nitrile gloves must be used.

First aid procedures for exposure to chemical substances

- **After inhalation** (in case of substances that cause pulmonary oedema) – take the exposed individual to fresh air and do not let them walk! Based on the situation, rinse the mouth and possibly the nose with water.
- **Exposure to a corrosive** – immediately take off all clothes that have been in contact with the chemical, remove rings, watches and bracelets if the skin under them has been exposed. Wash the affected skin with tepid water for 10–30 minutes; do not use a brush, soap or neutralisation! Cover the affected skin with sterile bandage. Do not apply any creams or other medicines!

- **Eye irritation** – flush the eyes with running water for at least 10 minutes – the eyes must be wide open (incl. using force). If the affected person wears contact lenses, remove them immediately. Never try to neutralise the substance!
- **Minor burning** – cool the burn with water, then cover with a sterile bandage.
- **Mechanical injury** – remove any fragments, shavings, dirt etc, then apply hydrogen peroxide or another disinfectant. Cover larger wounds with a sterile bandage.