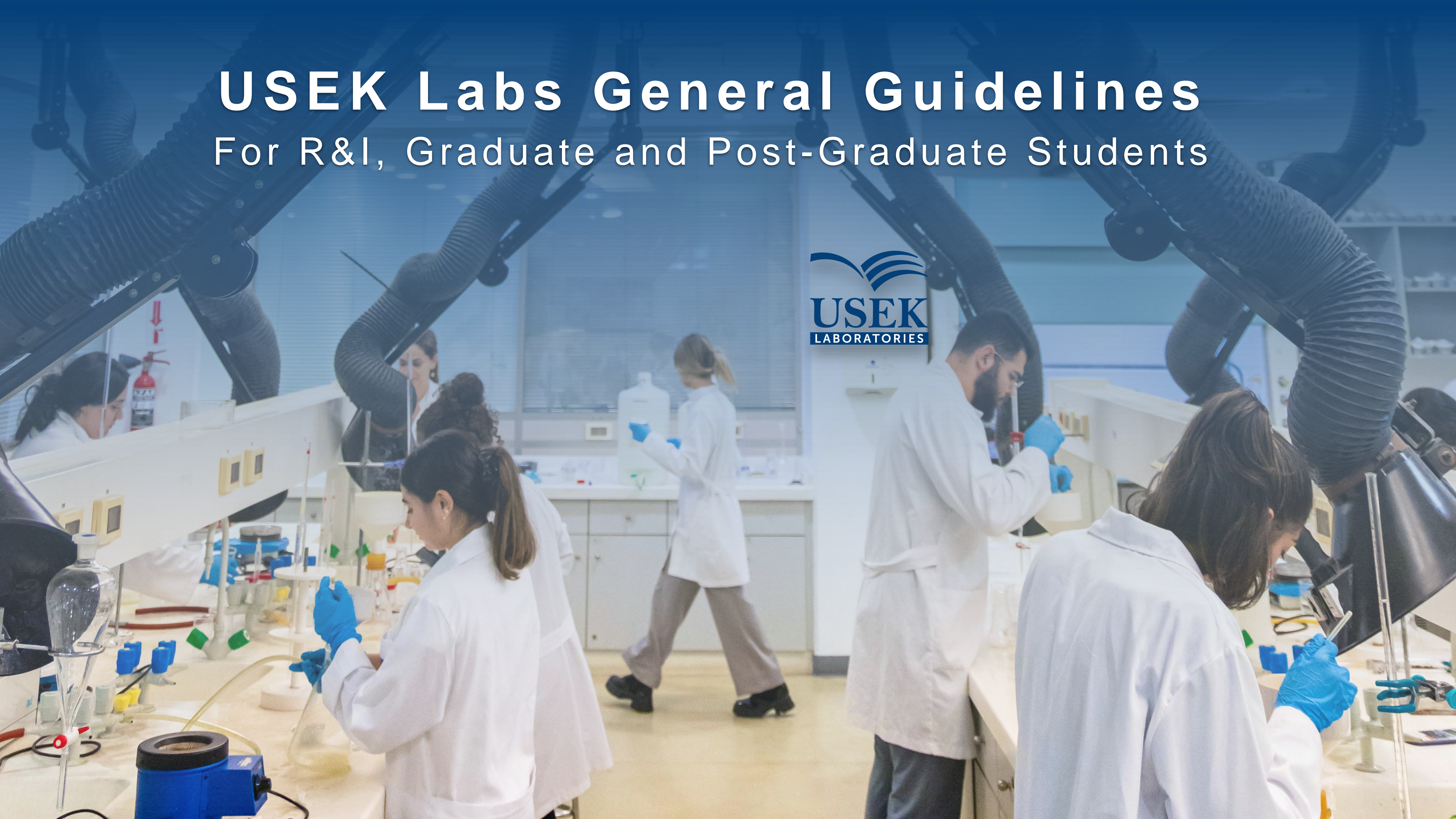


USEK Labs General Guidelines

For R&I, Graduate and Post-Graduate Students



These Labs General Guidelines for (i) Good Management Practices-GMP, (ii) Good Laboratory Practices-GLP, and (iii) Sustainable Practices and Circularity Measures listed below are applied to R&I, graduate and post-graduate students at USEK Laboratories (Ref. RE-PLA-004).



Contact us: labs@usek.edu.lb | +961 9 600 934/947/935

In case of emergency:

Kaslik Campus Laboratories: +961 9 600 265/911/292.

Zahle RUC Laboratories: Refer to the Student Support Office or call +961 8 932 132.

Table of Content

I. General Guidelines for Labs Good Management Practices (**GMP**)

“Effective labs management is the pillar that support the complex operations of a successful laboratory”.

By implementing good management practices, USEK Laboratories can enhance efficiency, ensure high quality, and achieve sustainable success.

II. General Guidelines for Labs Good Laboratory Practices (**GLP**)

“The mark of a great laboratory is not just its discoveries, but its unwavering commitment to safety and wellbeing of every individual in the lab”.

By fostering a culture of safety, USEK Laboratories can ensure that their environments are not only compliant with regulations but also conducive to safe and effective labs activities.

III. Sustainable Practices and Circularity Measures for Green Laboratories Commitment

*“Unsustainable patterns of **consumption** and production are root causes of the triple planetary crises of **climate change**, biodiversity loss, and **pollution**” (United Nations UN-SDG12).*

Laboratories are energy-intensive facilities, consuming many times the energy use of the average non-lab academic buildings. Laboratories use large quantities of air for ventilation and fume hoods; electricity to operate fans, lighting, and specialized lab equipment; and large quantities of water and process chilled water.

MISSION

The mission of the USEK Laboratories, anchored on the tripod of **Education, Research & Innovation, and Analysis Services**, is:

- to serve as a vibrant hub of learning and innovation, providing comprehensive active training to students, performing pioneering research that pushes the boundaries of knowledge, while offering expert analytical capabilities to support academic and industrial projects.
- to combine practical skills with conceptual knowledge, foster interdisciplinary collaboration, guarantee adherence to safety and ethical standards and share valuable insights with the broader community, thus contributing to academic excellence, industry advancement, and societal progress.

Following student-centered objectives for practical work, USEK Laboratories work synergistically with all academic units to provide hands-on experience, tactile visual learning methods, and inquiry-based activities for students in support of lectures, R&D, and innovation. Shared facilities are an integral part of education at USEK, giving students direct means to generate and experiment with innovative ideas and inventions to better heighten their educational experiences. Not only do students access these labs for educational purposes or senior design projects, but they also serve as resources for learners to pursue their entrepreneurial aspirations.

VISION

The vision of the USEK Laboratories is to become a leading hub of learning and research development, innovation, and analysis services where the trifecta of transformative education, cutting-edge equipment, and high-quality analytical facilities converge.

VALUES

- Pride and Belonging
- Rigor, Excellence, and Performance
- Collaboration and Sharing of Knowledge
- Integrity, Ethics, and Social Commitment



I-General Guidelines for Labs Good Management Practices (GMP)



Working Hours:

USEK Laboratories are open for research activities from 8:00 a.m. to 8:00 p.m., Monday through Friday (excluding holidays).

Any activity conducted outside of these hours is strictly banned unless authorized by the Director of USEK Laboratories (Cc: labs@usek.edu.lb)

Labs Assistant/Technician (LA/LT) Role:

The Laboratory Assistant/Technician provides support to laboratory personnel and R&I-GS-PGS learners by assisting with equipment and techniques, and adherence to good laboratory practices. The LA/LT is not allowed to conduct laboratory or research activities for R&I-GS-PGS learners.

Improvement Request Form-IRF

To uphold excellence and continually enhance the laboratories' operational processes, laboratory personnel are encouraged to complete the Improvement Request Form (e-form: IRF) and submit it to the USEK Labs Area Coordinator-LAC (Cf. LAC list| <https://www.usek.edu.lb/en/research/usek-laboratories> ; Cc : labs@usek.edu.lb).

I-General Guidelines for Labs Good Management Practices – GMP

Laboratories Access for Research & Innovation, Graduate, and Postgraduate Students (R&I, GS, and PGS):

- **Laboratories Regulatory Compliance Form-LRCF:** Before initiating any experimental lab activity and/or booking lab equipment, R&I-GS-PGS personnel are requested to visit the USEK Laboratories Operational Manager (Cc: labs@usek.edu.lb) at Building H, Floor B1, Office HS122 to sign the Laboratories Regulatory Compliance Form (e-form: LRCF).
- **HCR Consent Certificate:** For any research study involving human or animal subjects, supervisors and supervisees must obtain the Consent Certificate* from the Higher Center for Research (hcr@usek.edu.lb) prior to commencing experimental work. The HCR Consent Certificate ensures the protection of rights and welfare of all research participants.
- **Laboratory Notebook:** R&I-GS-PGS personnel should visit the USEK Labs Team Laboratories at Building H (Floors B1 and B2) or Building E (GF) to collect the Laboratory Notebook (RE-PLA-007). This notebook is essential for documenting the experimental procedures, results and calculations, and must be kept in the laboratory locker.
- **Purchasing Order Form (POF):** Before beginning any experimental work for R&I, FYP, Master thesis, or PhD thesis, the supervisor is requested to electronically submit the Purchasing Order Form (e-form: POF), duly completed and signed, to the Laboratories Operational Manager (Cc: USEK Laboratories Director and labs@usek.edu.lb).
- **Equipment, Material, and Locker Reservations:** For equipment reservations, cancellations, rescheduling or postponing, R&I-GS-PGS personnel are requested to contact the Labs Administrative Assistant (Cc: labs@usek.edu.lb), at least two business days before the reservation date.
- **Material Transfer-Relocation Form (MTRF):** Moving any machine, instrument, equipment, or material between lab rooms or outside the labs is not allowed unless authorized by the USEK Laboratories Director (Cc: Laboratories Operational Manager and labs@usek.edu.lb) (e-form: MTRF).
- **3-steps for USEK Laboratories Clearance (LC):**
 1. Return lab keys or cards and ensure proper disposal of waste at the end of research lab activities.
 2. Duly fill out and submit the Returned Products/Material form (e-form: RPMF) to the lab assistants or technicians.
 3. Fill out the USEK Laboratory Clearance Form-LCF and have it endorsed by the USEK Labs Area Coordinator (e-form: LCF).

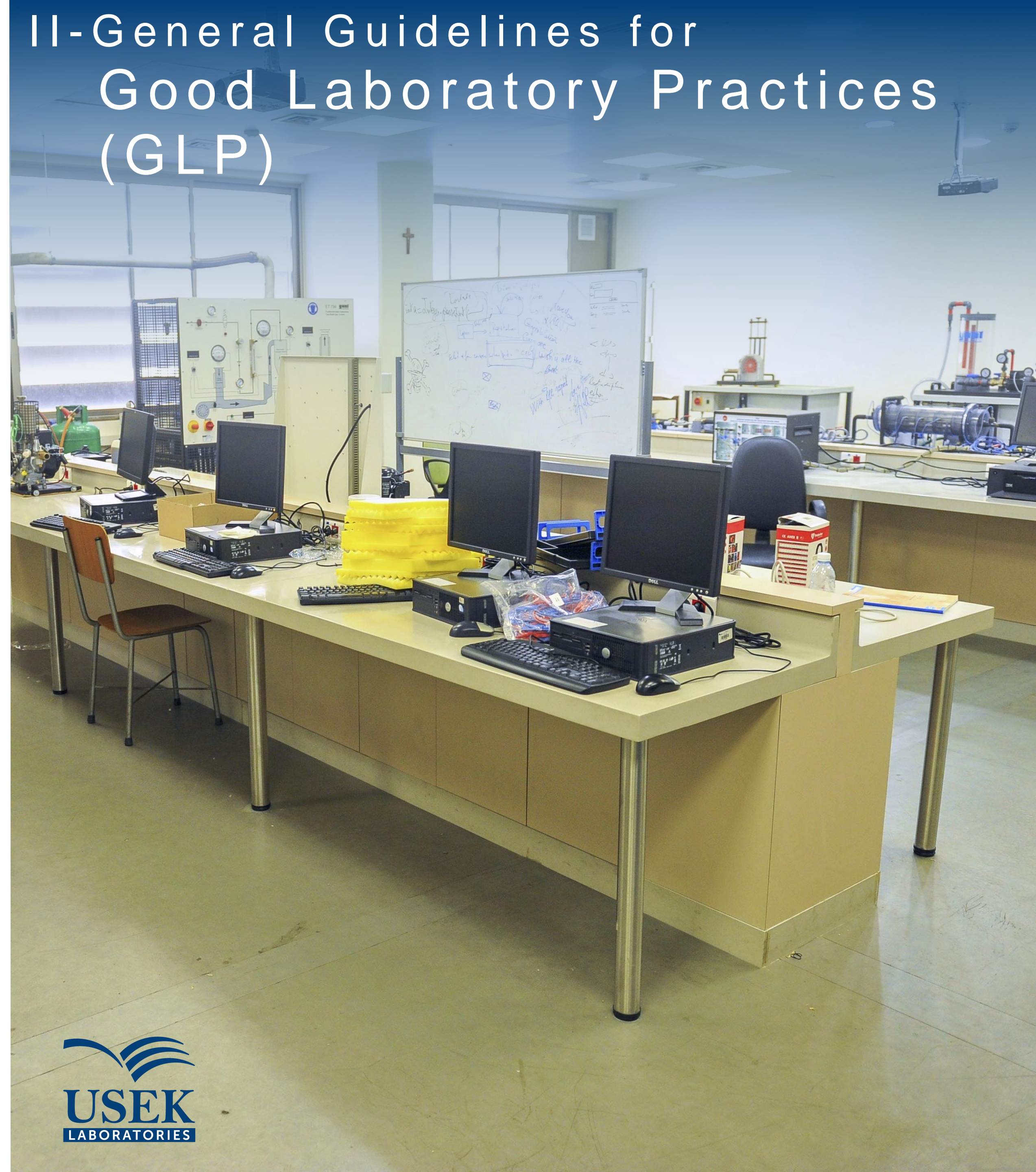
II-General Guidelines for Good Laboratory Practices – GLP



1. Follow COVID-19 and V. cholera **fact sheets displayed on the laboratory doors.**
2. Ensure you are familiar with the specific **instructions and safety checks of educational and research machines and devices in the laboratory.** This includes knowing the locations of fire alarms, extinguishers, emergency showers, emergency phone signage, first aid kits, biological and chemical spill kits, and other essential equipment. Additionally, acquaint yourself with the operating instructions displayed on the equipment to ensure proper lifecycle management.
3. **Emergency communication:** Emergencies can occur at any time, without warning. Laboratory personnel are strongly recommended to have a means of communication to **call 1265, 1911 or 1292** from any landline phone **or +961 9 600 265/911/292** (for Kaslik Campus) **or +961 8 932 132** (for Zahle RUC Laboratories) in case of emergency. If a phone is not available within the lab room, **follow the signs and/or maps indicating the nearest phone location.** Every lab member shares responsibility for emergency preparedness.
4. **First Aid Kits (FAKs):** FAKs are strategically placed within the laboratories' rooms. In case of an incident, promptly utilize the kits to ensure a swift and effective response. Cooperation from the lab personnel is vital to reduce harm, injuries, and damage. The USEK labs team is well-trained to use these kits, emphasizing the commitment to a safe laboratory environment.
5. **Laboratory Accident/Incident Report (LAIR):** In line with USEK Labs GMP-GLP for Safety and Circularity measures, any accident/incident occurring in the Lab must be reported by the lab assistant or technician. The latter is accountable for preparing and submitting the Accident/Incident Report (e-form: LAIR) to the Laboratories Director (Cc: Laboratories Operational Manager; labs@usek.edu.lb), and implementing all necessary support or corrective actions.
6. **Laboratory Security and Restricted Stock Access:** To ensure security against highly hazardous materials and compliance with USEK Laboratories Governing Policies, **access to the stock area is strictly restricted to authorized personnel.** If any material, products, or glassware is needed from stock, contact the designated authorized personnel or the USEK Labs team for assistance.

II-General Guidelines for Good Laboratory Practices (GLP)

- Laboratory doors must be locked whenever the lab is left unattended.
- Ensure all individuals in the laboratory (instructors, lab assistants, lab technicians, and students) **wear a white/blue lab coat with the USEK logo**, available at the USEK Library. This lab coat must be buttoned up.
- Wear **closed shoes** that provide full protection to the feet.
- Shorts** and sandals **should not be worn** when using **corrosives or machines** that present a skin contact hazard or where there is a potential for physical hazards such as dropping equipment or broken glass.
- Long hair** must be secured by tying it back.
- Avoid **wearing contact lenses** as they can absorb dust or vapors, complicating their removal during emergencies.
- Ensure efficient eye protection by **wearing protective goggles** to prevent severe eye injuries caused by hazardous material.
- Wear gloves** (e.g., latex, vinyl) when handling hazardous materials that may contact the skin directly. Avoid touching your face or hair with gloved hands during laboratory manipulations.
- Drinking, eating**, chewing gum, and storing food in the laboratory is strictly prohibited.
- Refrain from using oral suction** for pipette filling or emptying. Exercise caution with each reagent used.
- Do not rely on the sense of smell** to identify the contents of a container.
- Sitting on benches, playing, running, leaping**, or exhibiting any other form of misbehavior is **strictly prohibited** in the laboratory.





II-General Guidelines for Good Laboratory Practices (GLP)

- 19. Engaging in activities such as adding, mixing, heating, burning, tasting, moving, or manipulating items or reagents **outside the designated experiment** or lab course session is **strictly prohibited**.
- 20. **Toxic, corrosive, explosive, and volatile substances** that emit vapors or fine dust must be handled under a fume hood.
- 21. If an **experiment is in a continuous process (overnight or on weekends)**, it must be labeled with the name of the supervisor and R&I-GS-PGS, along with the start and approximate end dates. Any product kept outside of the lab cabinets must be also be labeled by the supervisor's and student's name. The USEK Labs team, lab assistant, or lab technician must be informed about these details.
- 22. **Samples must be labeled** with the name of the product or its biochemical formula, along with the supervisor's and student's name if stored.
- 23. **Do not manipulate any items** beyond the established recommendations. **Seek guidance from the instructor**, lab assistants, or technicians for appropriate advice.
- 24. **Unauthorized operation of laboratory machines or equipment**, including turning them on or off, or manipulating them in any way, **is strictly prohibited without explicit authorization** from the USEK Laboratories team.
- 25. **Report any accidents**, including **machines or equipment malfunctions** or electrical mishaps. Take immediate action to clean any spilled products on benches or workstations, following the USEK Laboratories' protocols.
- 26. Maintain proper hand hygiene by **washing hands** thoroughly before leaving the laboratory room.
- 27. Ensure that the **worktable, benches, and instruments or materials are properly cleaned and stored** by the student at the end of each lab course session. Seek approval from the instructor before leaving the room.

III. Sustainable Practices and Circularity Measures for Green Laboratories Commitment



The labs personnel must comply with the USEK standards and guidelines, adhering to their commitment to reduce overall energy consumption:

Standardized recycling and trash signage: Refer to USEK Labs team to ensure that recycling or trash bins are clearly labeled. Ensure proper disposal of waste, including machinery, waste processing machines, electronic waste, lumber, wire, sheetrock, broken brick, shingles, glass, pipes, concrete, metal, empty containers, hazardous material, bio-chemicals, organic and aqueous waste solutions.

Share your sustainability efforts with others.

1. Turn off room lights and air conditioners when not in use.
2. Turn off and/or unplug equipment, machines, and electrical devices when not in use.
3. Shut off your computer's monitor when not in use.
4. Share equipment among labs and turn off or unplug duplicate equipment.
5. Keep the sash closed on your fume hood to promote energy conservation and safety.
6. Report drips of water from sink taps, chilled water connections, or Reverse Osmosis faucets.
7. Keep freezers full by filling empty spots with ice packs or empty boxes. Clean out and consolidate freezers and refrigerators at least once per year.
8. Stay up-to-date with regulations*, permits, and guidelines for waste handling and disposal.
9. Comply with any specific requirements related to treating, neutralizing, or disposing of waste in the lab area.

Encourage others to adopt sustainable practices
and change their behavior to support
the Green Laboratories Commitment!

