

Pázmány Péter Catholic University
Faculty of Information Technology and
Bionics



OPERATING PROCEDURES
AND REGULATIONS OF THE
LABORATORIES

22 June, 2020

Revised Version, July 21, 2020

Created by	ITK Laboratory Heads, Dean's Office, Faculty Quality Assurance Committee, based on the PC Laboratory Regulations	
Approved by	01 July 2020	Faculty Quality Assurance Manager
Adopted by	13 July 2020	Faculty Council, Decision number: 15./2020.VII. 13.
Effective from	1 September 2020	

The Faculty of Information Technology and Bionics at Pázmány Péter Catholic University (hereinafter referred to as the Faculty), in alignment with the Faculty Student Code of Conduct and the Fire Safety Regulations, establishes the following regulations to define the fundamental rules for work and education in the Faculty's PC and R&D laboratories (hereinafter referred to as the laboratories).

Part I

General Provisions

Purpose and Structure of the Regulations

Section 1: The purpose of these regulations is to define:

- a) the operational procedures of the Faculty's laboratories, and
- b) the rules for staying in the laboratories.

Section 2: This regulation contains the general rules for the Faculty's laboratories and specific provisions for individual laboratories. For the purposes of this regulation:

- *Laboratory:* a room listed in Appendix 1 of this regulation may be designated as either a PC laboratory or a specialized laboratory, as indicated.
- *Laboratory Head:* an individual employed by the Faculty who is the head of the laboratory as specified in Appendix 1.
- *Supplementary Laboratory Regulations:* Regulations are attached as appendices to this regulation, which detail the specific rules for individual laboratories established by the Laboratory Head.
- *Laboratory Equipment:* All equipment present in the laboratory.
- *Specialized Laboratory Equipment:* Equipment listed in the supplementary laboratory regulations for specialized laboratories, or, if no such appendix exists, all equipment present in the specialized laboratory.

Scope of the Regulations

Section 3: The provisions of this regulation apply to all students and employees of the Faculty who engage in activities related to any of the laboratories operating within the Faculty. This includes but is not limited to, individuals working in laboratory spaces or using laboratory equipment and participants in study programs conducted in the laboratories.

Part II

General Regulations for Laboratories

Purpose of the Laboratories

Section 4: (1) The laboratories serve educational and research purposes.

(2) The equipment found in the laboratories is intended solely for tasks related to the laboratory's objectives and may be used exclusively for these purposes.

The Laboratory Head

Section 5: (1) The Head of a given laboratory is one or more individuals employed by the Faculty.

(2) The Laboratory Head is responsible for:

- a) establishing the rules for activities that may be conducted in the laboratory,
- b) issuing and revoking access permissions to the laboratory,
- c) maintaining laboratory equipment and installing necessary software,
- d) organizing training, instruction, and examinations required for the use of specialized laboratories,
and

e) documenting accidents resulting in personal injury in the laboratory and investigating their causes.

(3) The heads of specific specialized laboratories are listed in Appendix 1. For PC laboratories, the Laboratory Heads are staff members of the IT Department, and access permissions are requested by the Academic Administrations Office or the subject coordinator, as administered in the Neptun system.

The Lab Assistant, the Measurement Supervisor

Section 6: (1) The Lab Assistant, or the measurement supervisor (hereinafter referred to as the Lab Assistant), is an individual registered in the Neptun system for the course conducted in the given laboratory and is responsible for:

- a) ensuring adherence to laboratory regulations and laboratory guidelines during activities in the laboratory,
- b) managing student entry and exit during scheduled classes,
- c) making practice materials and protocols available, as well as providing information on handling hazardous materials and equipment used during the classes,
- d) tidying up in the laboratory after classes or work (including storing equipment and accessories in designated places, cleaning equipment, properly turning off equipment, removing waste, closing windows, etc.),
- e) evacuating the laboratory in case of emergency and promptly notifying the Laboratory Head and the reception service,
- f) notifying the Laboratory Head in case of observed hazards or irregularities in the laboratory,
- g) addressing hazards by eliminating the risk according to the expected level of expertise of the attendees,
- h) ensuring that activities in the laboratory are conducted in a safe manner from the perspectives of occupational and fire safety, and
- i) organizing first aid and medical care in case of accidents or health issues, involving the Dean's Office and the reception service as needed. In the case of severe injury, an ambulance must be called.

(2) The Lab Assistant must be present for the entire class duration. They are the first to enter the laboratory before the class begins and check its condition.

(3) The Lab Assistant may leave the laboratory during the session only if they can transfer supervision to another individual designated by the Laboratory Head.

Use of Laboratories

Section 7: (1) Laboratories and associated service/storage rooms must be kept locked.

(2) Access to laboratories is permitted only with the authorization of the Laboratory Head or the Lab Assistant as follows:

- a) During scheduled sessions, access is authorized by the Lab Assistant.
- b) The Laboratory Head authorizes access for research activities or work purposes, assigning access rights to the individual's key fob at the Dean's Office.

(3) Individuals authorized to use the laboratory must familiarize themselves with and adhere to the following regulations:

- a) Laboratory regulations,
- b) Accident and occupational safety regulations,
- c) Fire safety regulations,
- d) Waste management regulations,
- e) The Student Code of Conduct, and
- f) The IT Regulations of Pázmány Péter Catholic University.

(4) Any person present in the laboratory must immediately report to the Lab Assistant or the Laboratory Head:

- a) Any potential sources of danger or malfunctions,

- b) Any health risks that could affect safe working conditions,
- c) Emergencies, hazardous conditions, and
- d) Health issues or accidents.

(5) Unless otherwise specified, bags, coats, and other large or non-essential items must not be brought into the laboratories and should be stored outside. This rule does not apply to PC laboratories, where such items may be brought in if their placement does not interfere with laboratory use and safe working conditions (e.g., coats should be hung on a coat rack). Heads of specialized laboratories may define the types of items allowed and their storage rules for their specific laboratory.

(6) PC laboratories can also be used outside of teaching hours. Students who have obtained prior permission from the Dean's Office may collect a key card to access the computer room from the reception after signing the log.

(7) If a staff member or student is authorized to use the laboratory under paragraph (2) b) (research purposes) or paragraph (6) (PC laboratory use outside of scheduled hours), they are responsible for adhering to the obligations outlined in Section 6 (1) a) and d)–i) in the absence of the Lab Assistant.

Laboratory Regulations

Section 8: (1) In the laboratories, it is prohibited to:

- a) eat, drink, or bring food or beverages,
- b) disturb others' work,
- c) use laboratory equipment for purposes other than its intended use,
- d) use specialized laboratory equipment without specific authorization from the Laboratory Head or without proper training.

(2) In specialized laboratories, the following require the Laboratory Head's authorization or presence:

- a) removal of any equipment belonging to the laboratory,
- b) granting access to guests (for demonstrations or visits),
- c) installation of software or modification of software configurations,
- d) disassembly or modification of laboratory equipment configurations, and
- e) alteration of laboratory wiring (power, low-voltage, or uninterruptible power supplies).

(3) For PC laboratories, the following require the IT Department's authorization or presence:

- a) removal of any equipment belonging to the laboratory,
- b) installation of software or modification of software or hardware configurations on computers accessible via LDAP or AD identifiers, and
- c) alteration of laboratory wiring (power, low-voltage, or uninterruptible power supplies).

(4) In the laboratories, the Lab Assistant's authorization is required for:

- a) bringing in and using personal equipment, and
- b) using laboratory equipment.

(5) Any person present in the laboratory is required to:

- a) use their university ID and password to access laboratory computers, or if not applicable, access the laboratory in the manner specified by the Laboratory Head,
- b) turn off and properly store and clean used equipment at the end of their work,
- c) immediately leave the laboratory in the event of an emergency, following the instructions and supervision of the Lab Assistant or Laboratory Head,
- d) ensure their own safety and the safety of others during activities,
- e) safeguard the integrity of the laboratory and its equipment during activities,
- f) operate laboratory equipment according to its intended use, instructions, and specifications,
- g) handle laboratory equipment with increased caution during work, and
- h) compensate for any damage caused intentionally or due to failure to follow the Laboratory Head's or Lab Assistant's instructions.

(6) The use of personal protective equipment required by the nature of the work is mandatory.

Use of Specialized Laboratory Equipment

Section 9: (1) Using specialized laboratory equipment requires the authorization of the Laboratory Head or the Lab Assistant.

(2) Equipment that is out of service due to malfunction, repair, or maintenance must not be operated.

(3) Disassembling, modifying, or replacing parts of specialized laboratory equipment is only permitted in the presence of the Laboratory Head and by individuals with the appropriate qualifications.

(4) Specialized laboratory equipment may only be operated under supervision. Exceptions are listed in the appendices of this regulation, where certain specialized equipment specified by individual Laboratory Heads may be operated with periodic supervision.

(5) Equipment may only be operated outside of working hours (e.g., at night) with the knowledge and permission of the Laboratory Head.

Special Provisions

Section 10: Certain laboratories may have additional regulations due to equipment or processes requiring specialized expertise. The laboratory Heads establish these regulations within their own authority. Additional provisions are included in the appendices of this regulation.

Section 11: A camera surveillance system may operate within the laboratories to protect property and ensure the safety of human life, physical integrity, and personal freedom.

Part III

Sanctioning

Violation of Regulations

Section 12: (1) Deliberate breaches of laboratory order, instructions from the Laboratory Head or Lab Assistant, actions endangering others, and intentional damage result in full disciplinary and liability for damages on the part of the individual involved.

(2) Depending on the severity and frequency of the offence, a person violating the regulations may be subject to:

- a) a warning,
- b) temporary or permanent exclusion from the laboratory, or
- c) a disciplinary action (which may include formal charges).

Final Provisions

Section 13: Upon the entry into force of this regulation, the "*PC Laboratories Regulations*" effective from September 6, 2016, is hereby repealed.

Appendix 1

List of the Faculty's Laboratories and Special Laboratory Heads

(1) At the Budapest campus, the following rooms are classified as PC laboratories:

- 219. PC Laboratory
- 220. PC Laboratory
- 222. PC Laboratory
- 302. PC Laboratory
- 322. PC Laboratory
- 422. PC Laboratory

(2) At the Esztergom campus, the following rooms are classified as PC laboratories:

- [no specific rooms listed]

(3) At the Budapest campus, the following rooms are classified as special laboratories:

- 204. SOUND (Superresolution in Optical, Ultrasonic, and Nanomagnetic Detection)
Laboratory Heads: Miklós Gyöngy, György Csaba
- 302. Sensor Mobile Platforms Laboratory
Laboratory Heads: Kálmán Tornai, András Oláh
- 321/A. Electronic Measurement Laboratory II
Laboratory Head: Attila Tihanyi
- 321. Data, Media, Community
Laboratory Head: Gergely Lukács
- 324. Molecular and Systems Biology Laboratory
Laboratory Heads: Zoltán Gáspári, Bálint Péterfia, Attila Csikász-Nagy
- 328-329. Multi-Photon Measurement Techniques Laboratories
Laboratory Head: Balázs Rózsa
- 332. Translational Oncology Laboratory
Laboratory Head: Tamás Garay
- 334/A. Electrophysiology Laboratory
Laboratory Head: István Ulbert
- 339. VLSI Lab
Laboratory Head: András Kiss
- 340. Sensory Robotics Laboratory
Laboratory Head: György Cserey
- 341. Software-Defined Electronics and Virtual Instrumentation (SDE-VI) Laboratory
Laboratory Head: Géza Kolumbán
- 341/A. Rapid Prototyping Laboratory (Raptor)
Laboratory Head: Márton Bese Naszlady
- 341/B. Sensing and Machine Learning Laboratories
Laboratory Heads: Kristóf Karacs, András Oláh, András Horváth
- 342. Biomicrofluidics Laboratory
Laboratory Heads: Kristóf Iván, András Laki
- 415. Electrophysiology and Movement Analysis Laboratory
Laboratory Heads: István Ulbert, József Laczkó
- 420. Electronic Measurement Laboratory I
Laboratory Head: Attila Tihanyi

(4) At the Esztergom campus, the following rooms are classified as special laboratories:

- 217. Electronic Measurement Laboratory
Laboratory Head: Attila Tihanyi
- 218. Bio-microfluidics Laboratory
Laboratory Heads: Kristóf Iván, András Laki
- 219. Microscopy Laboratory
Laboratory Head: Csaba Pongor

Appendix 2

Supplementary Laboratory Regulations for PC Labs

- 1) Some classroom UTP sockets are designated for connecting personal notebooks. These are the only sockets that may be used for this purpose. It is recommended to use Wi-Fi connections whenever possible.
- 2) Instructors should report any issues or observations related to the computer labs via the Helpdesk platform. Students should report such issues to the email address: dekan.hivatal@itk.ppke.hu.
- 3) Requests for the installation of new software should be submitted via the IT Helpdesk at least one week before the start of the registration week. Requests for additional new software installations during the semester can only be made in exceptional cases and must also be submitted through the Helpdesk. Given the available resources, the system administrators will address these requests to the best of their ability.
- 4) Configuration changes must be requested from the system administrators through the Helpdesk at least one week prior to the event. During exams, the computers may operate in a special mode, which may include:
 - Restricting network access (e.g., no internet access from the computers).
 - Complete disabling of Wi-Fi.
 - Prohibiting access to personal files, while only allowing access to exam-related materials.
 - Collecting completed exam solutions, etc.

Appendix 3

Supplementary Regulations for the Software-Defined Electronics and Virtual Instrumentation (SDE-VI) Laboratory

- 1) Any requests or needs for rescheduling lab practices must be emailed to the lab supervisor.
- 2) Students must arrive prepared for measurements, potentially with independently completed homework. Preparation will be assessed through a short quiz consisting of written responses to brief questions before the start of the measurement. Students will receive their quiz results during the measurement session and may review them. Further review or checking of results is not permitted.
- 3) Measurements are conducted in groups, and group assignments are made before the measurements start. Discussions related to the measurement practice should be conducted quietly and in a manner that does not disturb other students.
- 4) There will be no scheduled group breaks during laboratory sessions. Each student should take breaks according to their needs and measurement task requirements. The lab supervisor must be informed if a student takes a break and leaves the lab.
- 5) After completing the measurements, all used equipment must be turned off, measurement setups must be disassembled, cables must be returned to cable organizers, and equipment must be left in good order. The power status of the equipment must be carefully checked. Failure to do so will result in the measurement work being deemed incomplete.

Appendix 4
Supplementary Regulations for the Translational Oncology Laboratory

- 1) The Translational Oncology Laboratory was established in collaboration with Semmelweis University to support the education and scientific research of students and staff from the Faculty of Information Technology and Bionics of Pázmány Péter Catholic University and Semmelweis University.
- 2) In compliance with the requirements for work involving sterility and biological hazards, access to the laboratory and all educational and research activities, including the study of methodologies, are subject to the approval of the Laboratory Head.

Appendix 5
Supplementary Regulations for the Molecular Biology and Biotechnology Laboratory

- 1) The Lab Assistant certifies the laboratory's readiness for work by signing the designated form. At the end of the session, they are the last to leave the room and check the condition of the equipment, lighting, and the safe storage of chemicals. They must confirm these conditions by signing the designated form before leaving.
- 2) Upon entering the laboratory, students sign to confirm their attendance at the lab class and acknowledge that they have familiarized themselves with and commit to adhering to the laboratory's rules applicable to them.
- 3) Wearing a lab coat and protective clothing is mandatory in the laboratory. The University does not take responsibility for any damage (such as contamination or tearing) to clothing, bags, etc., that may occur during laboratory work. Bringing bags into the laboratory is specifically discouraged.

Appendix 6
Supplementary Regulations for the Rapid Prototyping Lab

- 1) The Rapid Prototyping Laboratory (Raptor) supports the education of the Faculty's students and staff and aids scientific research and engineering development. This service may be provided through:
 - a) Manufacturing on demand,
 - b) Professional consultation,
 - c) Educational activities conducted within Raptor,
 - d) Providing access to materials and equipment available in Raptor, or
 - e) Other methods specified by the Laboratory Director in a separate regulation.
- 2) According to paragraph 1, Raptor's services are generally not available for private purposes. In exceptional and justifiable cases, the Laboratory Director may authorize the use of certain services for private purposes. The conditions for this authorization are detailed in an ad hoc agreement issued by the Laboratory Director.
- 3) The Faculty's students and employees, as well as third parties, are categorized based on their association with Raptor into the following categories:
 - a) Raptor member, or
 - b) Non-Raptor member.
- 4) A Raptor member is any individual listed by the Laboratory Director on the continuously updated roster of members. Any other individual not listed on the roster is considered a Non-Raptor member.
- 5) Only individuals with a valid fire and occupational safety examination issued by the Laboratory Director can be classified as Raptor members.
- 6) Becoming a Raptor member is possible for those who have a compelling reason to work with Raptor's equipment or materials (such as, but not limited to, independent laboratory work, thesis, diploma projects, or research activities). Those wishing to apply for Raptor membership (access rights) should submit their request to the Laboratory Director in writing. The Laboratory Director will review the submitted applications and notify the applicants of the decision. In case of a positive evaluation, the required training (on occupational safety and equipment handling) will be conducted, and upon the applicant's successful examination, the membership (and thus access rights) will be granted.
- 7) Raptor membership terminates:
 - a) If the requirement outlined in paragraph 5 is no longer met,
 - b) If the compelling reason stated in paragraph 6 ceases to exist,
 - c) Upon the member's written notice of resignation, or
 - d) Upon the member's expulsion.
- 8) Access to Raptor is granted to Raptor members and, under the supervision of Raptor members, to non-Raptor members. The laboratory director is responsible for operating the access control system according to the member registry,
- 9) Raptor is a restricted and hazardous area due to the equipment present, which requires heightened vigilance and could cause accidents, personal injury, or property damage if not operated correctly. Entry and work in this area are only permitted with appropriate fire and occupational safety knowledge.
- 10) The Laboratory Director must organize mandatory fire and occupational safety training for Raptor members. Attendance at this training is compulsory for Raptor members. Extraordinary fire and occupational safety training must be conducted:
 - a) Following an accident resulting in personal injury or significant property damage,
 - b) When there are changes in the rules for safe and health-preserving work,
 - c) After equipment modifications or the introduction of new equipment or technology.
- 11) The equipment found in Raptor can be categorized, from an occupational safety perspective, into two groups based on whether their operation requires specialized training:
 - a) Freely usable equipment,
 - b) Equipment requiring certification.

- 12) Before using freely accessible equipment, it is not required to take an exam, but the operating and handling instructions or the user manual of the equipment must be read, understood, and adhered to during operation.
- 13) Equipment that requires certification can only be used by individuals who are familiar with the specific equipment, have read and understood its operating and handling instructions or user manual, and have passed an examination on proper operation and maintenance conducted by the Laboratory Director.
- 14) The Laboratory Director must organize mandatory handling training for Raptor members wishing to use specific equipment. Extraordinary handling training must be conducted:
 - a) Following an accident resulting in personal injury or significant property damage,
 - b) When there are changes in the rules for safe and health-preserving work,
 - c) After equipment modifications or the introduction of new technology.
- 15) A Raptor member found to have hazardous behavior, mishandling equipment, or failing to adhere to rules, thereby posing a risk of injury or property damage, will receive a warning and must attend extraordinary fire and occupational safety or handling training.
- 16) Work in Raptor may be carried out by Raptor members and, under the supervision of at least one Raptor member, by non-Raptor members. Before commencing work, machines and personal protective equipment must be checked, and work may only be performed with flawless equipment and tools.
- 17) The list of specialized laboratory equipment in Raptor includes:
 - a) CraftBot 2 3D printer,
 - b) CraftBot Plus 3D printers,
 - c) Mark Two 3D printer,
 - d) Objet24 3D printer,
 - e) Anycubic Photon 3D printer,
 - f) Epax 3D printer,
 - g) CNC6040 1.5 kW milling machine,
 - h) Roland MDX-40A plotter,
 - i) Palette 2 Pro material mixer,
 - j) Heated liquid tank ultrasonic cleaning device.

The use of all specialized laboratory equipment is subject to certification. The 3D printers listed in points a)–f) can also be operated with periodic supervision.