	GTIIT_EHS_ISO file	File No.: GTIIT_EHS_06_02 文件编号：
		Rev. No.: 03 版本号：
		Effective date: 2025-12-01 生效日期:
File name **文件名**	**Lab Emergency Drilling Plan** **学校实验室应急演习计划**	

Approval process 审批过程

	Name **姓名**	**Title** **职务**	**Signature** **签名**	**Date** **日期**
Drafted by **起草人**	Xu Guangxiang 许光祥	EHS Officer		
Reviewed by **审阅人**	Yigal Cohen; Shaogang Chen 陈少刚 Sehoon Park;	PVC & General Director; PVC assistant & Safety coordinator Academy Safety Representative;		
Approved by **批准人**		Campus Safety Committee;		

Reversion records 版本历史记录

Rev. No. **版本号**	**Publication date** **出版日期**	**Rev. reason/ content modified** **再版原因/更改内容**
01	2020-03-01	New file 新建文件
02	2022-06-01	Regularly updated with no major changes. 定期更新，无重大变更内容。
03	2025-12-01	Regular renew 周期审阅更新

Relevant departments (select relevant departments with a "√")

相关部门 (用√勾选相关部门)

Construction Dept. 校园建设部	√	Operation Dept. 校园运营部	√	H.R. Dept. 人力资源部	√
RIGS 研究创新和研究生部	√	U.G. Dept. 本科教学部	√	I.T.Dept. 电脑信息部	√

Relevant documents 相关文件

No 无

Distribution mode (black) **发放方式** (涂黑)

Electronic edition ■ Paper edition □

电子版 ■ 纸版 □

1. Drilling purpose 演习目的：

The school lab operation involves various kinds of chemical, biological bacteria, as well as numerous electrical equipment and instruments. All kinds of relative incident can be caused by people's unsafe behaviors, objects' unsafe condition or other unsafe factors such as environment.

Through emergency response drilling practice to increase the awareness of emergency response of lab staff and students, self-rescue and emergency handling ability. To improve the capacity of rescue and response work, Improve the management level of lab safety, occupational health, environmental protection and security events, to prevention incident happen. Make teachers and students fully understand the laboratory emergency rescue requirements.

学校实验室运行涉及各类化学原料、及生物感染物料，以及众多电气设备和仪器。由于人的不安全行为，物的不安全状态，或者环境等其他不安全因素的存在均可能引发各类灾害。

通过应急响应演习增强实验室人员和学生的应急救援意识，提高对灾害救援和自救工作的组织及处理能力，做好实验安全、职业健康、以及环境保护和安保事件的预防、处置工作，并使师生全面了解实验室应急救援要求。

2. Frequency of emergency drilling 应急演习的频率：

In principle, the annual emergency drill should be conducted four times to ensure every program and warehouse takes their practice.

If any special requirement, the number can be increased with the approval of management.

学校演习原则上每年进行四次，确保每个学科和仓库最少安排一次应急演练。

特殊情况下，经管理层批准可根据需求增加演习次数。

No.	**Key point of Drilling** **演习重点**	**Planning time** **计划时间**	**Complete date** **完成日期**	**Key control Unit** **主控业务单位**
1.	Solvent dumping and leakage caused by improper operation in analytical chemistry lab 分析化学实验室内实验期间，操作员操作不当，导致腐蚀性化学试剂泄漏	Sep.		Teaching lab T501 教学实验室 T501
2.	One user of the organic chemistry lab improperly	Sep.		Teaching lab T401

	operated that cause the precursor and explosive chemicals in fume hood to fall and leak, and then catch fire. 有机化学实验室人员操作易燃易爆化学品不当，导致通风橱内溶剂着火 （涉及易燃化学品静电积聚火灾、职业健康防护、消防处理）			教学实验室 T401
3.	When the biological laboratory operator prepares to process the biological waste for sterilization, the operator catches the falling object when the slide is dropped from experiment bench, and the hand is stabbed and bleed. 实验室生物感染物灭菌处理期间，人员被针头刺伤，人员受伤感染处理	Oct.		Teaching lab T106 教学实验室 T106
4.	Chemical reagents fall during the unloading of the chemical warehouse, damage caused by packaging, chemical leakage treatment (selectable chemicals such as precursor chemicals, explosives, highly toxic chemicals, etc.) 化学品仓库卸货期间化学试剂掉落，包装破损导致，化学品泄漏处理（可选择易制毒化学品、易制爆、剧毒化学品等敏感化学品）	Nov.		Chemical warehouse in research lab building 科研楼危险化学品仓库
5.	Hazardous waste in waste storage warehouse reacts during storage to cause fire and causes air pollution. 废弃物储存仓库废弃物在储存期间发生相适应性反应导致反应放热冒烟	Nov.		Hazardous waste storage warehouse 废弃物暂存间
6.	The user of the highly toxic chemicals didn’t do good at record and control as follow the regulations required that cause the highly toxic reagent (mercury chloride) was stolen. (theft case of strict control chemicals, social	Dec.		Lab using highly toxic chemical 教学实验楼剧毒化学品使用实验室

	security case) 实验室领用剧毒化学品未按要求进行使用登记监管，发生剧毒氯化汞试剂被盗事件（属于管之类化学品安保事件）			
7.	Emergency response for natural disaster: when the typhoon or storm came, three water submerged pumps in the underground parking lot of the research building failed that cause the accumulated water in basement cannot be pumped into the drainage system. It seriously affected the chemical warehouse of the research building. 自然灾害应急处理 台风来临前暴雨，科研楼地下停车场三台水泵故障导致地下停车场无法及时排水，严重影响到科研楼化学品仓库	May.		Parking lot of research building 科研楼地下停车场

3. Contents of drilling 各次应急演习的内容：

(1) Strong corrosive solvent dumping and leakage caused by improper operation in analytical chemistry lab (key words: chemical leakage, occupational health, fire protection)

分析化学实验室操作员因操作不当，导致腐蚀性溶剂倾倒泄漏（化学品泄漏、职业健康、消防）

Scenario 脚本简介：

When the chemical user transferred 200ml strong corrosive solvent from 20L rubber barrel to the experimental container in fume hood. The solution leaks in the fume hood due to sliding of the handheld device.

The user immediately informs the lab tutor. Lab tutor trigger the emergency response by notifying members of the emergency response team with wet chat and phone.

all lab personnel close to the leakage area who evacuate out of the lab to prevent interference with emergency treatment.

操作者在通风橱内，从 20L 胶桶转移将 200ml 强腐蚀性溶剂至实验容器内时，因手持设备滑动，导致溶液在通风橱内泄露。

操作员立即触发应急响应程序，告知实验室教员。实验室教员通过微信和手机立即通知应急响应小组成员，实验室内靠近泄漏区域的其他实验人员进行应急撤离，疏散至实验室外，防止干扰应急处理。

The key checking points of this drilling are 该次演习重点是：

- when chemical spill case happens, how to timely and accurate report.
  发生化学品泄漏事故时，实验室报告流程的及时准确性。
- test the consciousness of self-protection of lab staff in case of emergency.
  测试实验室人员发生紧急情况时，自我保护疏散意识。
- checking if the team's familiar with the spill control process and the correctness of the use of chemical control kits.
  应急小组对泄漏应急处理流程的熟悉程度化学品防泄漏工具的使用正确性。
- in case of leakage, checking if the ERT member know how to wear proper PPE according to the chemical character
  泄漏应急时，应急人员的自我保护意识及 PPE 佩戴正确性。
- how to get the accurate MSDS for leaked materials.
  泄漏物料 MSDS 获取准确性。

Estimated launch in Sep. 预计在 09 月

(2) One user of the organic chemistry lab improperly operated that cause the precursor and explosive chemicals in fume hood to fall and leak, and then catch fire.
有机化学实验室操作员因操作不当，导致通风橱内易燃易爆化学品倾倒，并着火。（化学品泄漏、职业健康、消防）

Scenario 脚本简介：

When the operator transfers from a 350ml glass container and dispenses 250ml of flammable solvent into five 50ml containers in a fume hood, the hand-held device slides, causing one of the glass containers to be knocked over and the other three glass containers fall down. The solution leaks in the fume hood, and the leaking solvent contacts the electric furnace wire in the fume hood, causing the solvent to ignite in an instant.

操作者在通风橱内，从 350ml 玻璃容器转移将 250ml 易燃溶剂分装至 5 个 50ml 容器内时，因手持设备滑动，导致打翻其中一个玻璃容器，并碰到其他三个玻璃容器，导致溶液在通风橱内泄露，泄露溶剂接触到通风橱内电炉丝，导致瞬间泄露溶剂着火。

The user immediately informs the lab tutor. Lab tutor trigger the emergency response by notifying members of the emergency response team with wet chat and phone.

all lab personnel close to the leakage area who evacuate out of the lab to prevent interference with emergency treatment.

操作员立即触发应急响应程序，告知实验室教员。实验室教员通过微信和手机立即通知应急响应小组成员，实验室内靠近泄漏区域的其他实验人员进行应急撤离，疏散至实验室外，防止干扰应急处理。

The key checking points of this drilling are 该次演习重点是：

- when chemical spill case happens, how to timely and accurate report.
  发生化学品泄漏事故时，实验室报告流程的及时准确性。
- test the consciousness of self-protection of lab staff in case of emergency.
  测试实验室人员发生紧急情况时，自我保护疏散意识。
- checking if the team's familiar with the spill control process and the correctness of the use of chemical control kits.
  应急小组对泄漏应急处理流程的熟悉程度化学品防泄漏工具的使用正确性。
- in case of leakage, checking if the ERT member know how to wear proper PPE according to the chemical character
  泄漏应急时，应急人员的自我保护意识及 PPE 佩戴正确性。
- how to get the accurate MSDS for leaked materials?
  泄漏物料 MSDS 获取准确性。

Estimated launch in Sep. 预计在 09 月

(3) When the biological laboratory operator prepares to process the biological waste for sterilization, the operator catches the falling object when the slide is dropped from experiment bench, and the hand is stabbed and bleed.

生物实验室操作员准备处理生物废物进行灭菌时，载玻片掉落时操作人员为接住掉落物，发生手部被刺伤流血事件（生物感染、职业健康）

Scenario 脚本简介：

The operator is going to take the containers contaminated with biological bacteria to sterilized in the autoclave. When collecting the slide on the test bench, the slide was accidentally knocked off the table, and the personnel reached out to grab the **falling** object due to the stress reaction. Causes the hand to be scratched by sharp edges. The laboratory co-workers will assist in the processing immediately after discovery.

操作者将破损并沾染生物菌种的容器拿去高压灭菌锅消毒，在收集实验台台面载玻片时，不慎将载玻片碰落桌面，人员因**应激反应**伸手去抓掉落物品，导致手部被锋利边缘划伤。实验室协同作业人员发现后立即协助处理。

The key checking points of this drilling are 该次演习重点是：

- when biological infection incident happens, how to timely and accurate report.
  发生生物感染事故时，实验室报告流程的及时准确性。
- Test laboratory personnel self-protection and handling capabilities in the event of an emergency.
  测试实验室人员发生紧急情况时，自我保护和处理能力。
- Emergency medical treatment for biological infections.
  应急小组对生物感染事件的医疗处理。
- in case of bio-safe case, checking if the ERT member know how to wear proper PPE according to the Infectious species character
  生物感染事件发生时，应急人员的自我保护意识及 PPE 佩戴正确性。
- how to get the accurate MSDS for Infectious species?
  感染性菌种 MSDS、危害性等信息的获取准确性。
- **Estimated launch in Oct.**
  预计在 10 月

(4) Chemical reagents fall during the unloading of the chemical warehouse, damage caused by packaging, chemical leakage treatment (selectable chemicals such as precursor chemicals, explosives, highly toxic chemicals, etc.)

化学品仓库卸货期间化学试剂掉落，包装破损导致，化学品泄漏处理（可选择易制毒化学品、易制爆、剧毒化学品等敏感化学品）

Scenario 脚本简介：

During the unloading of chemical warehouses, chemical reagents fall down, packaging is damaged, and chemical spills are treated (can select one type of special chemicals such as precursor chemicals, explosives, highly toxic chemicals, etc.);

Some contractors (shippers) feel uncomfortable due to inhalation of chemical vapors, nausea and vomiting;

On-site ERT require medical treatment personnel to perform medical treatment;

ERT informed the security personnel to immediately isolate the area, carry out area control, and prohibit unrelated personnel and vehicles from entering the accident site;

The chemical warehouse supervisor contacted the campus ERT for on-site rescue;

化学品仓库卸货期间化学试剂掉落，包装破损导致，化学品泄漏处理（可选择易制毒化学品、易制爆、剧毒化学品等敏感化学品）；

有承包商（押运员）因吸入泄露化学品蒸汽感觉不适，恶心呕吐；

现场应急人员要求医疗处理人员进行医疗处理；

现场操作人员告知安保人员立即将区域隔离，进行区域控制，禁止无关人员和车辆进入事故现场范围；化学品仓库管理员联系校内化学品应急处理小组进行现场救援；

The key checking points of this drilling are 该次演习重点是：

- Checking how warehouse personnel of operations department deal with sudden chemical spills case
  运营部仓库人员的对发生突发性化学品泄漏事故处理
- Timely report when injury case happen
  发生人员伤害事故时的报告流程的及时准确性
- Verify emergency response competence of chemical personnel
  检验校内实验室以外接触化学品部门人员的应急响应能力
- Verify the effectiveness of first aid treatment and contact process of external rescue
  检验校内简单医疗处理和联系外部救援的处理有效性
- The correctness of first aid measures for poisoning case
  应急医疗救助人员对化学品中毒人员的急救措施正确性
- Correctness of PPE use for ERT members access incident areas

应急人员进入化学品中毒区域个人防护用品配备的正确性

- **Estimated launch in Nov.**
  演习计划时间：计划 11 月进行

(5) Hazardous waste in waste storage warehouse reacts during storage to cause fire and causes air pollution.
废弃物储存仓库废弃物在储存期间发生相适应性反应导致起火，并形成空气污染。

Scenario 脚本简介：

In hazardous waste storage warehouse, waste transfer personnel mix some incompatible hazardous waste together during the storage of waste. When transferring waste containers, some drums are accidentally overturned that cause the waste liquid in the container to flow out, and have severe reaction. The reaction produces irritating odors and white smoke, which diffuse throughout the waste storage and emanate from the window and door to the outside atmosphere.
废弃物储存仓库废弃物，废弃物转运人员在进行废弃物储存期间，发生不相适应的两种化学废弃物混存，并在操作期间不慎打翻容器，导致容器中废液流出，发生剧烈反应。反应时产生刺激性气味和白烟，烟雾弥漫整个废弃物储存间，并从窗门散发至外大气环境中。

The key checking points of this drilling are 该次演习重点是：

- How to handle the hazardous waste spill incidents;
  进行突发性的废弃物储存和环境泄漏事件处理；
- Check if ERT member is aware of their responsibilities and familiar with incident control, and mitigate losses and impact on the surrounding environment;
  各应急小组人员清楚自己的职责，熟练处理降低事故覆盖范围，减小损失和对周边环境的影响；
- Check if the ERT members are familiar with PPE using when they access the incident area.
  应急人员进入化学品泄露和反应区域个人防护用品配备的正确性。
- **Estimated launch in Nov.**
  演习计划时间：计划 11 月进行。

(6) The user of the highly toxic chemicals didn't do good at record and control as follow the regulations required that cause the highly toxic reagent (mercury chloride) was stolen. (theft case of strict control chemicals, social security case)

实验室领用剧毒化学品未按要求进行使用登记监管，发生剧毒氯化汞试剂被盗事件（属于管制类化学品安保事件）

Scenario 脚本简介：

The user of the highly toxic chemicals didn't do good at record and control as follow the regulations required that cause the highly toxic reagent (mercury chloride) was stolen. (theft case of strict control chemicals, social security case)

The lab manager found that the quantity of the highly toxic chemicals didn't match the record of the use, and confirmed that there was a lack of the amount of highly toxic chemicals in lab;

The lab manager immediately reports to school ERT according to incident report process;

The ERT close all the school gates for area control, and check the whole site, check the monitoring and other information; Inspect the security loopholes.

实验室领用剧毒化学品未按要求进行使用登记监管，发生剧毒氯化汞试剂被盗；

实验室负责人发现剧毒化学品数量和领用记录不符，并确认现场剧毒化学品数量存在缺失；

实验室负责人立即联系校应急响应小组进行处理；

安保接命令关闭学校大门，对现场进行检查，检查监控等信息；

对校内安防漏洞进行检查；

The key checking points of this drilling are 该次演习测试重点是：

- Check if the report process follows the requirement, such as: the lab manager know how to timely and accurate report.
  检验实验室对管制类化学品安防事故的报告流程及时和准确性；
- Check if the ERT is familiar with this kind of social security case handling.
  确认现场安防人员的管理和应急处理能力。
- Check if the ERT is familiar with incident investigation at campus security incidents;
  检查现场安防和事故调查能力，对校园治安事故的处理能力；
- **Estimated launch in Dec.**
  演习计划时间：计划于 12 月进行。

(7) Before the typhoon came, there are storm. Three water submerged pumps in the underground parking lot of the research building failed that cause the accumulated water in basement cannot be pumped into the drainage system. It seriously affected the chemical warehouse of the research building.
台风来临前暴雨，科研楼地下停车场三台水泵故障导致地下停车场无法及时排水，严重影响到科研楼化学品仓库

Scenario 脚本简介：

Before the typhoon came, there are storm. Three water submerged pumps in the underground parking lot of the research building failed that cause the accumulated water in basement cannot be pumped into the drainage system. It seriously affected the chemical warehouse of the research building. Public facility failures impact chemical storage and check the emergency response for natural disaster;
台风来临前暴雨，科研楼地下停车场三台水泵故障导致地下停车场无法及时排水，严重影响到科研楼化学品仓库储存安全。公共设施故障对化学品储存的影响和应急响应措施的落实；

The key checking points of this drilling are 该次演习重点是：

- Check the report process about natural disaster.
  发生自然灾害次生事故时，事故报告流程的及时性；
- Check if the ERT is familiar with the handling of natural disaster.
  校内应急小组对自然灾害应急处理流程的熟悉程度及应急处置措施维护和使用响应能力；
- When natural disaster happens，how to handle the chemical storage when it is in dangerous situation.
  检查一旦发生严重此生灾害，如何处置校内重要化学品的处置能力；
- Estimated launch in May
  演习计划时间：预计 05 月进行。

4. Personnel involving in emergency drilling 参加应急演习的人员：

- Campus emergency response team and responsible personnel
  校内应急小组成员及负责人
- All on-duty security guards
  全体当值保安员
- Volunteer fire fighters of all departments
  各部门义务消防队员

- Emergency medical aid personnel
  校内应急医疗救助人员

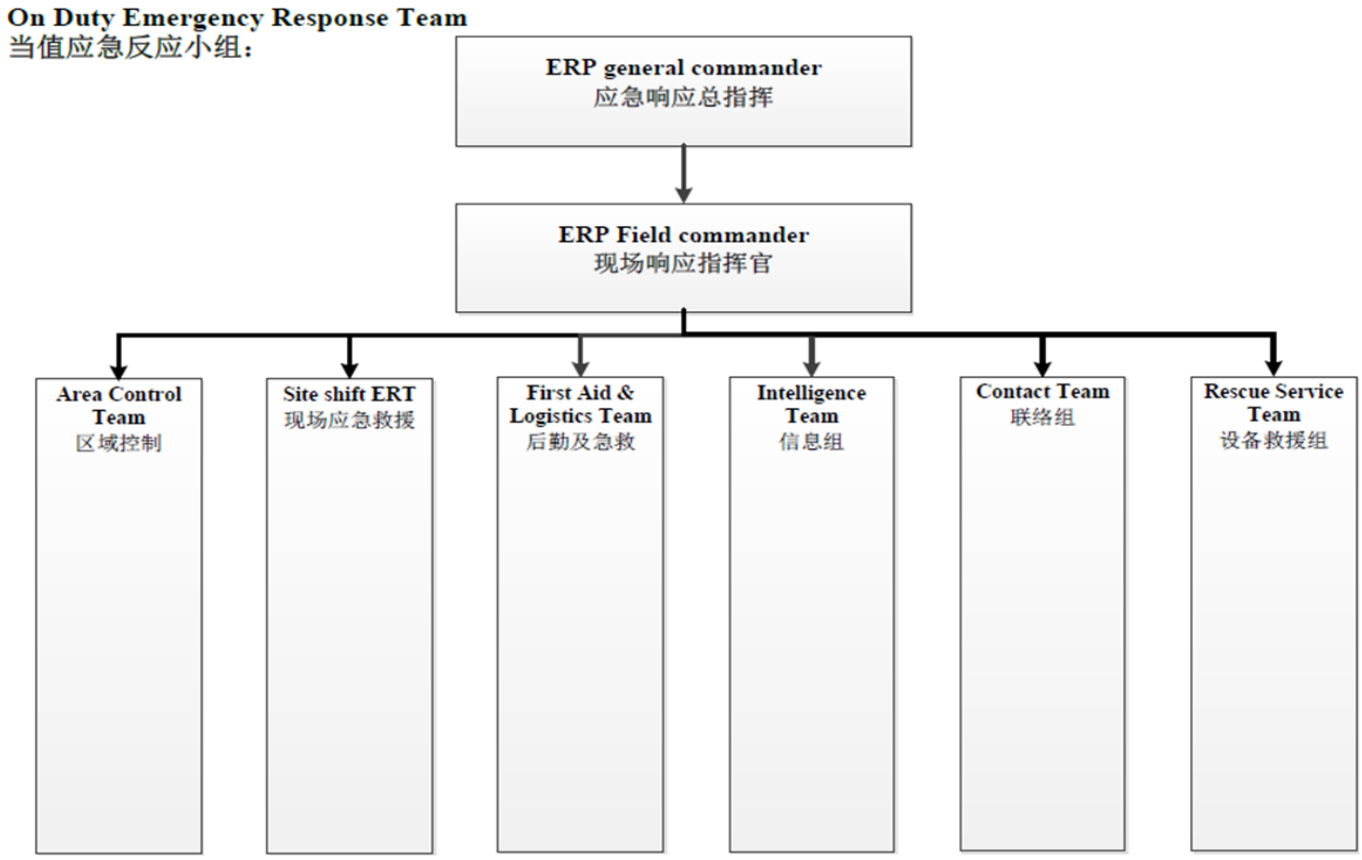
5. Organization and plan of drilling 演习的组织和计划

Operation department and EHS are responsible for the organization of drilling, search for lab managers and other departments coordinators support.
演习的组织由校运营部及 EHS 具体负责，其他部门和实验室负责人配合。

- EHS drafts the annual emergency drilling plan.
  EHS 拟订年度应急演练计划和方案；
- Give detail description of what every personnel of emergency team is responsible for, and communicate with every member to let him/her understand him/her role in emergency rescue completely.
  详细描述应急小组各成员的职责内容，并于各成员沟通，使其完全了解小组成员各自的角色；
- Before drilling, prepare for the relevant equipments and contact with the internal and external departments.
  演习前，设备准备和各内外部门的联系；
- After confirming the date and time, inform all department heads of time.
  确定演习日期和时间后，提前通知各部门。

6. Emergency Response Team frame and responsibility

应急反应小组架构和各自的职责：



❖ If the emergency reaction commander is absent or can't perform the command, the highest manager in site should act as the commander.

若紧急应变指挥官不在现场或不能进行指挥，由现场最高管理级别的人员担任指挥官。

7. Summary of emergency incident rescue 紧急事故救援总结：

- After every firefighting drilling, Campus Emergency Response Team should have a summary.
  每次消防演习结束后，校内应急小组应召开总结会议，对演习效果和经验教训进行总结。
- Collect feedback about drilling from all departments and labs.
  搜集汇总各部门对演习的反馈意见。
- Summarize the lessons and disadvantage, in order to keep continuous improvement for procedure and coordination among each team.
  总结经验和不足，以便于事故应急程序和各小组间配合等等的持续性改进。