高雄醫學大學緊急應變計畫

Kaohsiung Medical University

Emergency Response Plan

109 年 11 月 13 日環保暨職業安全衛生委員會第一次臨時會議通過

November 13, 2020 Passed by the 1st interim meeting of Environmental Protection, Occupational Safety and Health Committee

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February 09, 2021 Passed by the 2nd Environmental Protection, Occupational Safety and Health Committee Meeting

1、 法源依據

Article 1 Legal Basis

(1) 職業安全衛生法。

1. Occupational Safety and Health Act

(2) 毒性及關注化學品管理辦法。

2. Toxic and Concerned Chemical Substances Control Act

(3) 本校「災害防救計畫」。

3. KMU Disaster Prevention and Protection Plan

2、 目的

Article 2 Purposes

(1) 防範實驗場所災害發生，強化實驗場所人員緊急應變能力。

1. Prevent disasters in laboratories and enhance the emergency response capabilities of the laboratory personnel.

(2) 研擬災害正確處理程序，擬定緊急應變組織架構及負責工作分配，以使應變之執行快速且有效率。

2. Develop proper disaster handling procedures, establish an organizational structure for emergency response, and assign responsibilities to ensure prompt and efficient execution of the response.

(3) 針對實驗場所災害發生訂定事故調查及檢討，以進行必要的改善或減災工作。

3. Establish accident investigation and review procedures for laboratory disasters to carry out necessary improvements or mitigation efforts.

3、 適用對象

Article 3 Applicability

本校實驗場所工作者。

All laboratory workers in Kaohsiung Medical University (KMU)

4、 應變指揮中心權責（附表一）

Article 4 Responsibilities of the Emergency Operation Center (Appendix 1)

(1) 總指揮官

1. Chief Commander

1.視災害搶救之需要，召集緊急應變小組，成立指揮中心。

(1) Convene the emergency response team and establish an operation center depending on the needs for disaster rescue operation.

2.救災作業之協調與狀況之掌握。

(2) Coordinate the disaster relief operation and monitor the situation.

3.各項緊急應變錯失之決定與發佈實施。

(3) Decisions, proclamation, and implementation of various emergency response measures.

(2) 副總指揮官

2. Deputy Chief Commander

1.總指揮官無法進行指揮緊急應變行動時由副總指揮官代理。

(1) When the Chief Commander is unable to direct the emergency response operation, the Deputy Chief Commander will act as a substitute.

2.協助各項緊急應變錯失之決定與發佈實施。

(2) Assist in the decisions, proclamation, and implementation of various emergency response measures.

3.事發現場救災與化學物質處理作業之指揮與部署。

(3) Command and deployment of disaster relief at the incident scene and handling of chemical substances.

4.開設現場指揮中心。

(4) Set up an onsite operation center.

5.完成指揮交付任務。

(5) Complete the assigned command tasks.

6.執行各項搶救任務。

(6) Execute various rescue tasks.

(3) 公關資訊組

3. Public Relations and Information Team

統一對外發佈消息，並處理所有媒體的需求。

Release information to external parties as a unified window, and deal with all media inquiries.

(4) 安全諮詢官

4. Safety Advisory Officer

監視整個災害現場的安全狀況，並確認現場所有搶救人員的安全性。

Monitor the overall safety conditions at the disaster scene and ensure the safety of all rescue personnel on site.

(5) 通報中心

5. Reporting Center

於應變指揮中心現場聯絡其他支援機構的協助。

Coordinate the assistance efforts of other support agencies at the emergency operation center on site.

(6) 避難引導與現場管制

6. Evacuation Guide and Onsite Control

1.災害現場人員清查及避難引導。

(1) Personnel accountability and evacuation guidance at the disaster scene.

2.交通指揮與車輛管制人員進出校園。

(2) Direct traffic and control vehicles and personnel entering and exiting the campus.

3.隔離事發現場及建立警戒標示，管制人員進出。

(3) Blockade the incident scene, establish warning signs, and control personnel access.

4.引導外部救災單位進入災區救災位置。

(4) Guide external disaster response units to the disaster area for the rescue operation.

(7) 安全防護組

7. Safety and Protection Team

1.提供現場救災人員所需物資或設備及人員支援工作。

(1) Provide necessary supplies, equipment, and personnel support for the onsite rescue operation.

2.事發後現場之清理工作。

(2) Post-incident cleanup and site restoration.

(8) 搶救組

8. Rescue Team

1.提供災害現場斷水、斷電工作。

(1) Implement water and power cutoff at the disaster scene.

2.現場發生火災時之初期滅火。

(2) Initial fire-fighting effort at the scene in case of a fire.

3.於外部消防支援單位尚未到達時，火勢初步控制或圍離。

(3) Preliminary fire control or containment before external fire-fighting support units arrive.

4.事發現場後之供水、供電恢復事項。

(4) Restoration of water and power supply at the scene after the incident.

(9) 醫療救護

9. Medical Care

現場協助傷患急救及送醫治療事項。

Assist in providing first aid for the injured at the scene and sending them off for

medical treatment.

5、 緊急應變處理

Article 5 Emergency Response Management

(1) 實驗場所災害發生後啟動緊急應變小組將依災害類型及其規模，劃分為三個工作等級（附表二）：

1. When the Emergency Response Team is activated after a disaster has occurred in the laboratory, three work levels will be distinguished based on the type and scale of the disaster (Appendix 2):

1.第一級：災害範圍限於實驗場所內，可自行掌控。

(1) Level 1: The disaster is confined to the laboratory and can be controlled independently.

2.第二級：實驗場所無法掌控需請求學校應變組織及外援單位支援。

(2) Level 2: The laboratory is unable to control the situation and requests assistance from the University's emergency response organization and external support units.

3.第三級：災害已非校內組織所能掌握。

(3) Level 3: The disaster is beyond the control of the University's internal organization.

(2) 應變處理流程（如圖一）

2. Emergency response procedures (see Figure 1)

(3) 實驗室災害通報內容（如圖二）需張貼於各實驗場所電話旁明顯處。

3. The Laboratory Incident Notification Contents (see Figure 2) have to be posted prominently next to the telephones in all laboratories.

(4) 本校各大樓實驗場所遇緊急災害疏散路線圖（如圖三）。

4. The emergency evacuation maps for laboratories in all buildings of KMU (see Figure 3).

各級避難最終集合地點如下：

The final assembly points for each level of evacuation are as follows:

1.第一、二級避難集合地點：本校操場（如圖四）。

(1) Assembly point for Levels 1 and 2 evacuation: KMU Sports Field (see Figure 4)

2.第三級避難集合地點：河堤公園、十全一路 94 巷（如圖五）。

(2) Assembly point for Level 3 evacuation: Riverside Park; Lane 94, Shih-Chuan 1st Road (see Figure 5)

(5) 事故調查與應變計畫檢討：

5. Incident investigation and review of the response plan:

1.意外事故發生後為了人員安全或防止更大損害，而採取必要措施外不得任意

破壞現場。

(1) The incident scene shall not be tampered with at discretion after an accident has occurred, except for necessary measures that may be taken to ensure personnel safety or prevent further damage.

2.意外事故發生後應立即通知有關人員，至出事現場查視發生事故之設備、環境，分析災害原因，提出具體對策。

(2) Relevant personnel shall be notified immediately after an accident has occurred to inspect the equipment and environment at the accident scene, analyze the cause of the disaster, and propose specific countermeasures.

3.事故發生後實驗場所負責人與環安場所職業安全管理師填寫「事故調查表」(附表三) 提報環安委員會針對災害應變計畫之缺失及意外發生進行檢討 (內容應包括：調查原因、災害預防、處置程序、應變能力、訓練與演練及綜合檢討等) 。

(3) After the accident, the laboratory director and the occupational safety management specialist at the EHS office shall complete the Incident Investigation Report (Appendix 3) and submit it to the Environmental Protection, Occupational Safety and Health Committee for reviewing the shortfalls of the Emergency Response Plan and the occurrence of the accident. (Content of the review shall include: cause investigation, disaster prevention, handling procedures, emergency response capabilities, training and drills, and comprehensive evaluation, etc.)

4.檢討紀錄完成後提請環保暨職業安全委員會審查，經校長核定後，並據緊急事故分級以修正本校緊急應變計畫並列入安全衛生教育訓練教材。

(4) After completing the review record, submit it to the Environmental Protection, Occupational Safety and Health Committee for examination. With the President’s approval, the University’s Emergency Response Plan will be revised accordingly based on the incident classification, and the review content will be incorporated into the safety and health education and training materials.

6、 本計畫經環保暨職業安全衛生委員會審議通過後，自公布日起實施，修正時亦同。

Article 6 The Directives shall be passed by Environmental Protection, Occupational Safety and Health Committee Meeting and then implemented on the date of promulgation and shall apply to subsequent amendments.

附表一
Appendix 1

高雄醫學大學化學物質災害緊急應變組織編組表

Kaohsiung Medical University

Chemical Emergency Response Organizational Table

編組 Roles/Teams	負責人 Responsible persons	執掌 Responsibilities
總指揮官 Chief Commander	校長或總務長 President or Vice President for General Affairs	1. 視災害搶救之需要，召集緊急應變小組，成立緊急應變指揮中心。Convene the emergency response team and establish the Emergency Operation Center depending on the needs for disaster rescue operation. 2. 救災作業之協調與狀況之掌握。Coordinate the disaster relief operation and monitor the situation. 各項緊急應變措施之決定與發佈實施。Decisions, proclamation, and implementation of various emergency response measures.
副總指揮官 Deputy Chief Commander	總務長 Vice President for General Affairs	1. 指揮官無法進行指揮緊急應變行動時由副總指揮官代理之。When the Chief Commander is unable to direct the emergency response operation, the Deputy Chief Commander will act as a substitute. 2. 協助各項緊急應變措施之決定與發佈實施。Assist in the decisions, proclamation, and implementation of various emergency response measures. 3. 事發現場救災與化學物質處理作業之指揮與部屬。Command and deployment of disaster relief at the incident scene and handling of chemical substances. 4. 開設現場指揮中心。Set up an onsite operation center. 5. 完成指揮交付任務。Complete the assigned command tasks. 執行各項搶救任務。Execute various rescue tasks.
公關資訊組 Public Relations and Information Team	主任秘書 Secretary-General	統一對外發布消息，並處理所有媒體的需求。 Release information to external parties as a unified window, and deal with all media inquiries.
安全諮詢官 Safety Advisory Officer	環安場所主任 Director of EHS Office	監視整個災害現場聯絡其他支援機構的協助。 Monitor the overall safety conditions at the disaster scene and ensure the safety of all rescue personnel on site.
通報中心 Reporting Center	警衛隊隊長 Chief of Campus Security Squad	於應變指揮中心現場聯絡其他支援機構的協助。 Coordinate the assistance efforts of other support agencies at the emergency operation center on site.

避難引導與現場管制 Evacuation Guide and Onsite Control	警衛隊 Campus Security Squad	1. 災害現場人員清查與避難引導。Personnel accountability and evacuation guidance at the disaster scene. 2. 交通指揮與車輛管制人員進出校園。Direct traffic and control vehicles and personnel entering and exiting the campus. 3. 隔離事發現場及建立警戒標示，管制人員進出。Blockade the incident scene, establish warning signs, and control personnel access. 引導外部救災單位進入災區救災位置。Guide external disaster response units to the disaster area for the rescue operation.
安全防護組 Safety and Protection Team	事務組 General Affairs Division	1. 提供現場救災人員所需物資或設備及人員支援工作。Provide necessary supplies, equipment, and personnel support for the onsite rescue operation. 事發後現場之清理工作。Post-incident cleanup and site restoration.
搶救組 Rescue Team	營繕組 Construction and Maintenance Division	1. 提供災害現場斷水、斷電工作。Implement water and power cutoff at the disaster scene. 2. 現場發生火災時之初期滅火。Initial fire-fighting effort at the scene in case of a fire. 3. 於外部消防支援單位尚未來到之時，火勢初步控制或圍籬。Preliminary fire control or containment before external fire-fighting support units arrive. 事發現場後之供水、供電恢復事項。Restoration of water and power supply at the scene after the incident.
醫療救護組 Medical Care Team	衛保組及環安室 Environmental Protection Division and EHS Office	現場協助傷患急救及送醫治療事項。 Assist in providing first aid for the injured at the scene and sending them off for medical treatment.

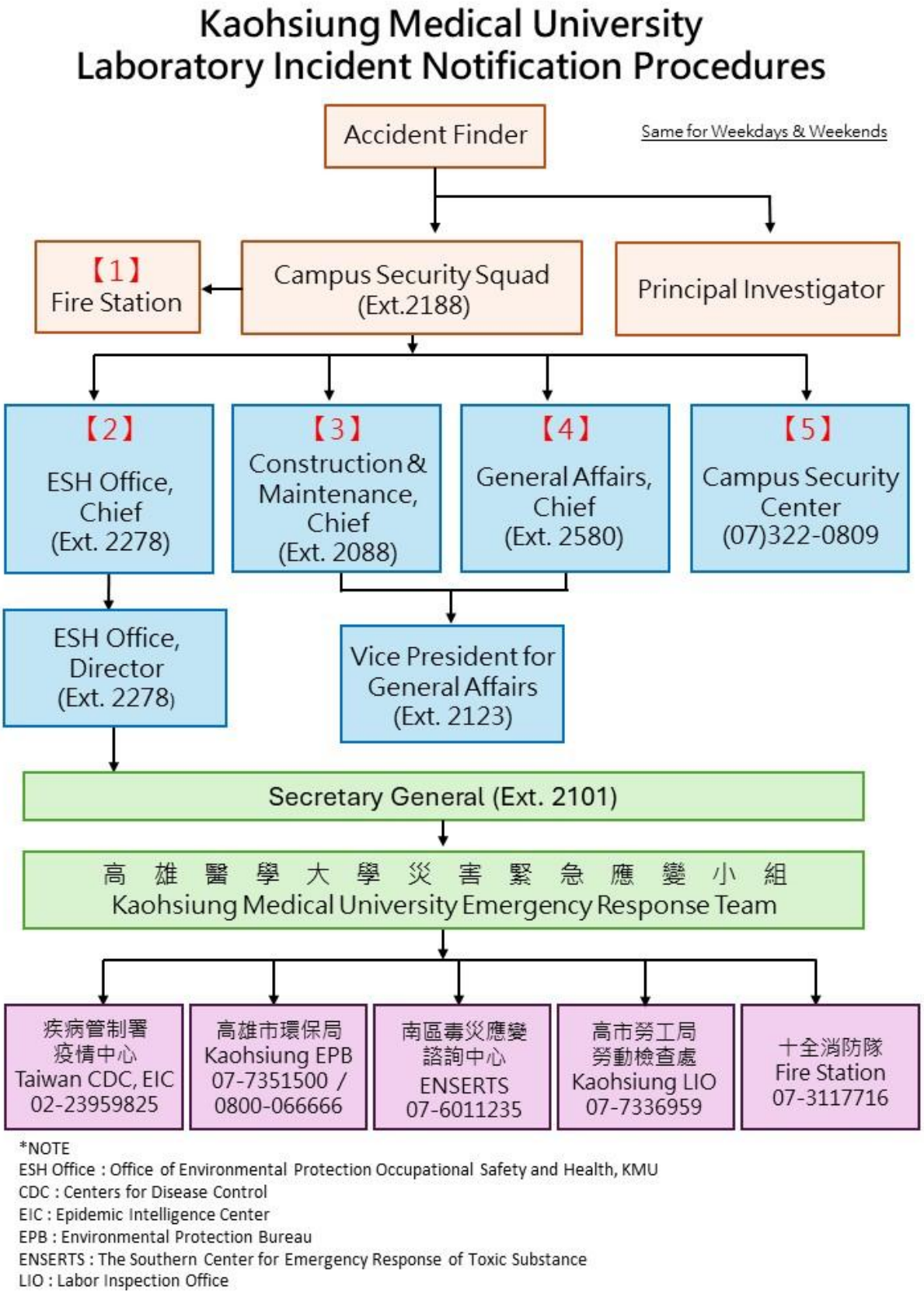
附表二 校園實驗場所與實驗場所緊急事故分級表

Appendix 2 Campus Laboratories and Classification of Laboratory Emergencies

事故範圍 Scope of incident	影響等級 Level of impact	災害情況 Condition of the disaster	參與人員 Participants
實驗場所內小範圍 Small area inside a laboratory	第一級 Level 1	實驗場所內發生意外事故，進行實驗場所內人員或一樓層人員局部疏散管制，影響層面較小者。 An accident occurs in the laboratory. A partial evacuation and control of personnel within the laboratory or on the same floor is required, with a relatively minor impact. 1.僅涉及 1－2 間實驗場所之小型災害。A small-scale accident that affects only 1-2 laboratories. 2.異味。Peculiar odor. 3.停電。Power outage. 4.火警警報動作，但只有煙霧者。Fire alarm is activated, but only due to smoke. 5.實驗場所本身可應變處置者。The emergency can be handled by the laboratory itself.	實驗場所負責人，科系、所的人員或啟動該棟大樓之現場緊急應變小組。 Laboratory director, department/institute personnel, or the building's onsite emergency response team is activated.
校園內大範圍 Large area in the campus	第二級 Level 2	第一階段狀況繼續擴大，啟動校內緊急應變小組或外界支援控制災害。 The Level 1 situation continues to escalate, and the campus emergency response team or external support is activated to control the incident. 1.災害範圍擴，部份樓層或整棟大樓均受波及時。The affected area expands to multiple floors or the entire building. 2.毒氣大量外洩。Massive leak of toxic gas. 3.發生大型災害如不明原因爆炸。A major disaster occurs, such as an unexplained explosion. 4.化學品洩漏時。A chemical spill occurs. 5.發生地震，造成建築物損壞者。An earthquake occurs, causing damage to the building(s).	實驗場所負責人，科系、所的人員或啟動該棟大樓之現場緊急應變小組及校內緊急應變組織。 Laboratory director, department/institute personnel, or the building's onsite emergency response team and the campus emergency response team are activated.

擴散至校外地區 Extended to areas outside the campus	第三級 Level 3	第二級狀況繼續擴大，非校內緊急應變小組可控制，且可能擴及校外，必須尋求外部支援者。 The Level 2 situation continues to escalate to an extent out of control of the campus emergency response team, and may further expand to areas outside the campus; external support must be sought. 1.大量毒氣外洩漫延現象，可影響人員及污染環境者。Extensive toxic gas leakage spreads and may affect personnel and contaminate the environment. 2.火發生無法控制，可能波及週遭社區。A fire breaks out and cannot be controlled; may affect the surrounding community. 3.其他可影響校外人員及環境。Other conditions that may affect personnel and the environment outside the campus.	實驗場所負責人，科系、所的人員或校內緊急應變組織，地區消防隊其安政府支援單位（衛生及環保單位）。 Laboratory director, department/institute personnel or the campus emergency response team, and regional fire department or other governmental support units (health and environmental protection units).

圖一 Figure 1



*NOTE
ESH Office : Office of Environmental Protection Occupational Safety and Health, KMU
CDC : Centers for Disease Control
EIC : Epidemic Intelligence Center
EPB : Environmental Protection Bureau
ENSERTS : The Southern Center for Emergency Response of Toxic Substance
LIO : Labor Inspection Office

圖二 實驗場所災害通報流程範例

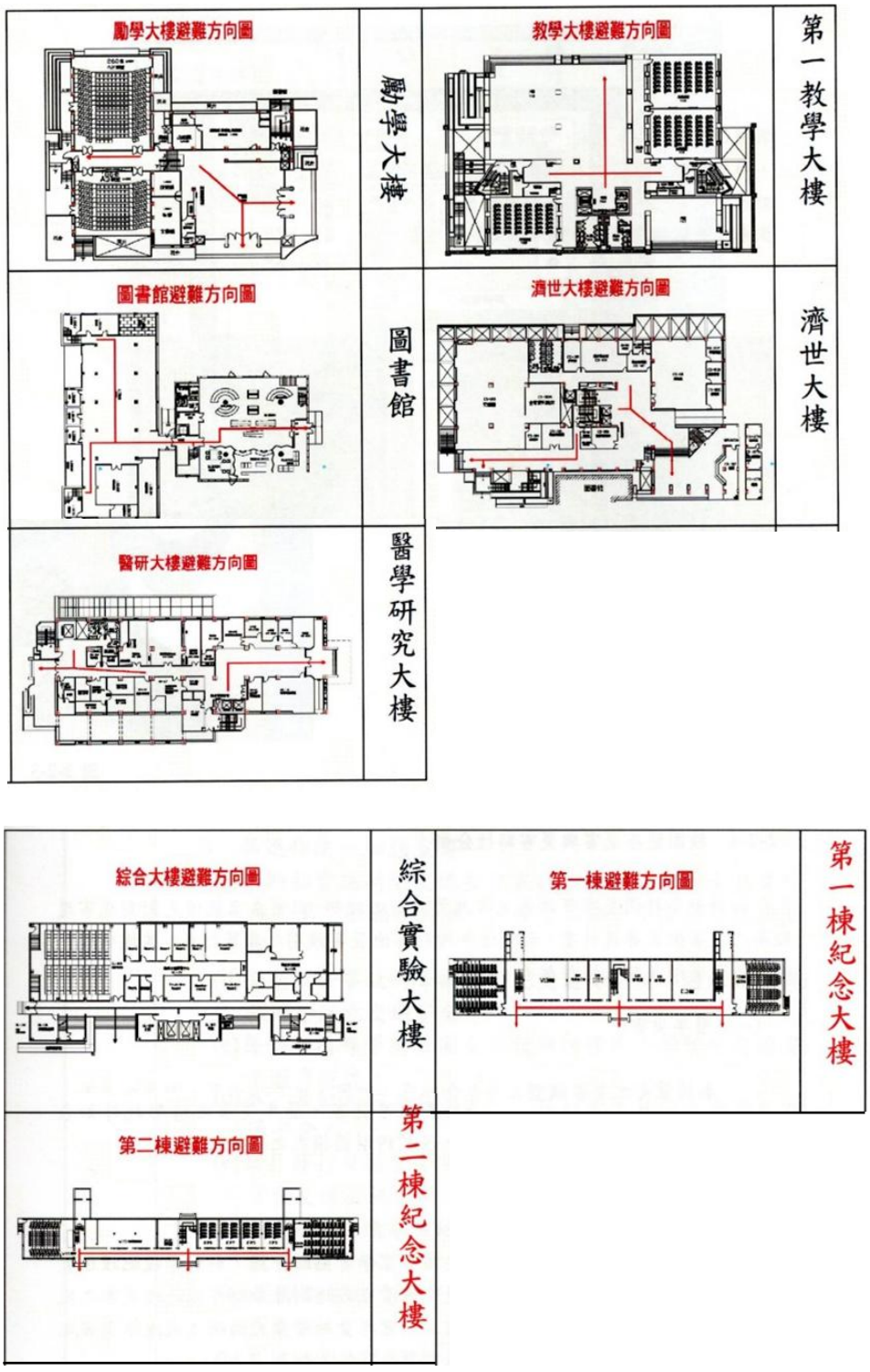
Figure 2 Model of Laboratory Incident Notification Procedures



高雄醫學大學
Kaohsiung Medical University
實驗室災害通報流程
Laboratory Incident Notification Procedures
事件發現者
Accident finder
通報
Report
實驗室負責人
Laboratory Director
警衛隊（分機：2188）
Campus Security Squad (Ext. 2188)
聯絡消防局（119）
Contact the Fire Department (119)
通報內容範例
Example of a report
通知實驗室負責人與撥打 2188（警衛隊）
Notify the Laboratory Director and call 2188 (Campus Security Squad)
我是_____老師實驗室的人員，位於_____大樓_____室，分機_____。目前實驗室發生（火災）或（化學品_____大量洩漏），現場（有/無）人員受傷，請儘速派人協助處理。
I am calling from Professor _____'s laboratory, located in _____ Building, Room _____, extension number: _____. Currently, there is a (fire) or (massive chemical leak of _____) in the laboratory. There are (someone/no one) injured at the scene. Please send assistance as soon as possible.
※ 實驗室人員在完成通報後，請按壓該樓層之消防警鈴，通知該樓層人員進行疏散。
※ After making the report, the laboratory personnel should press the fire alarm on that floor to notify occupants to evacuate.

附圖三 各大樓疏散路線圖

Figure 3 Emergency Evacuation Maps for Various Buildings



勵學大樓

Li-Hsueh Building

勵學大樓避難方向圖

Li-Hsueh Building Evacuation Direction

第一教學大樓

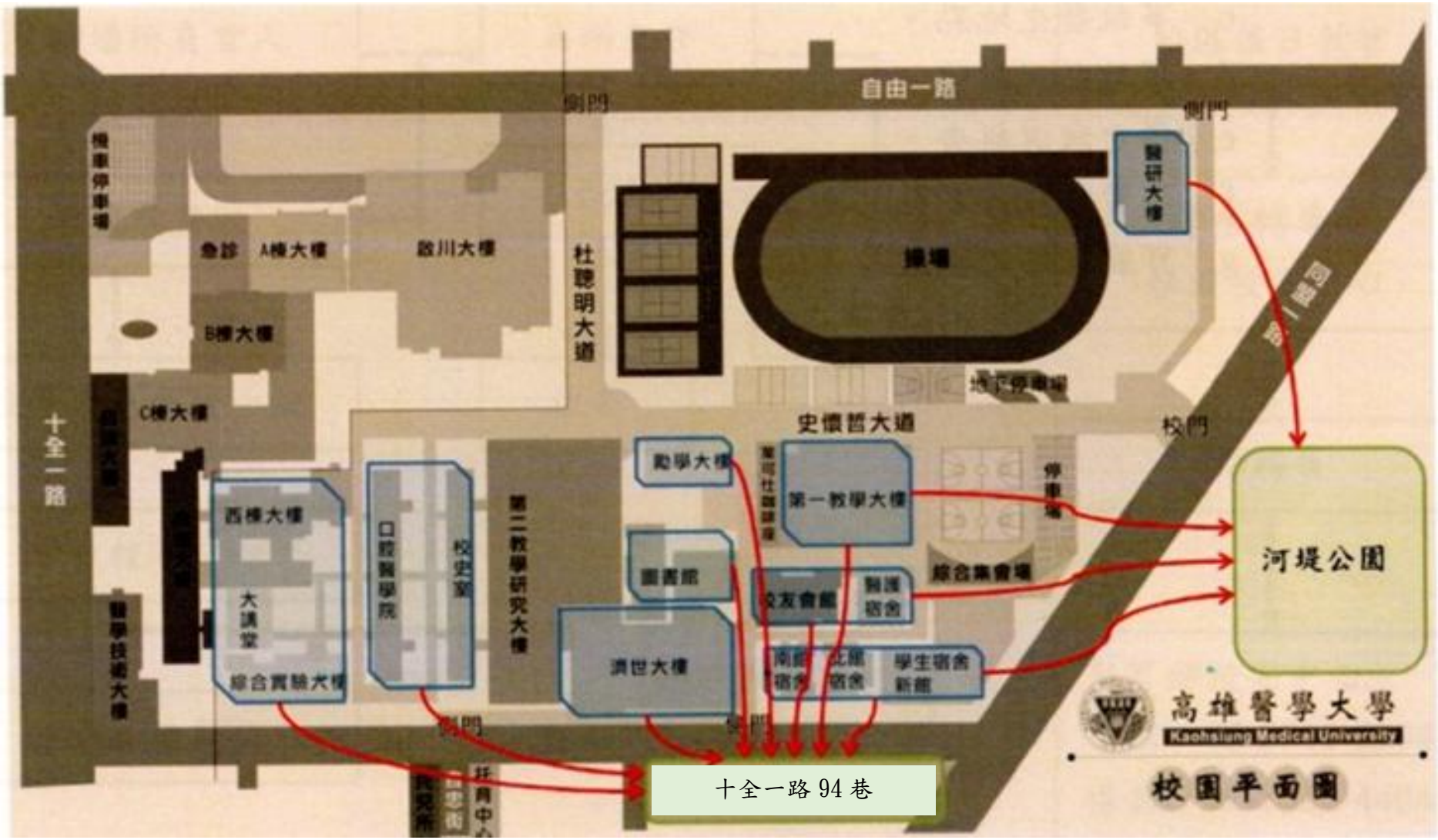
First Teaching Building
教學大學樓避難方向圖
First Teaching Building Evacuation Direction
圖書館
Library
圖書館避難方向圖
Library Evacuation Direction
濟世大樓
Chi-Shih Building
濟世大樓避難方向圖
Chi-Shih Building Evacuation Direction
醫學研究大樓
Medical Research Building
醫研大樓避難方向圖
Medical Research Building Evacuation Direction
綜合實驗大樓
Laboratory Complex Building
綜合大樓避難方向圖
Laboratory Complex Building Evacuation Direction
第一棟紀念大樓
KMU First Historic Building
第一棟避難方向圖
KMU First Historic Building Evacuation Direction
第二棟紀念大樓
KMU Second Historic Building
第二棟避難方向圖
KMU Second Historic Building Evacuation Direction

圖四 第一、二級避難集合地點 Figure 4　　Assembly Points for Level 1 and Level 2 Evacuation



圖五 第三級疏散集合地點

Figure 5 Assembly Point for Level 3 Evacuation



自由一路

Zihyou 1st Rd.

側門

Side Gate

十全一路

Shih-Chuan 1st Rd.

機車停車場

Motorbike Parking

急診

Emergency Room

A 棟大樓

Hospital Building A

B 棟大樓

Hospital Building B

C 棟大樓

Hospital Building C

啟川大樓

Building Chi-Chuan

杜聰明大道

Tsung-Ming Tu Boulevard

操場

Sports Field

醫研大樓

Medical Research Building

地下停車場

Underground Parking

同盟一路

Tongmeng 1st Rd.

史懷哲大道

Schweitzer Boulevard

校門

Main Entrance

醫學技術大樓

Medical Technology Building

西棟大樓

Hospital Building West Wing

大講堂

Grand Auditorium

綜合實驗大樓

Laboratory Complex Building

口腔醫學院

校史室

Kaohsiung Medical University Historical Archives

側門

Side Gate

自忠街

Zihjhong St.

托育中心

Child Care Center

第二教學研究大樓

International Academic Research Building

勵學大樓

Li-Hsueh Building

圖書館

Library

濟世大樓

Chi-Shih Building

第一教學大樓

First Teaching Building

校友會館

Alumni House

醫護宿舍

Dormitory for Medical Staff

綜合集會場

Multi-purpose Assembly Area

停車場

Parking Lot

南館宿舍

Dormitory (S)

北館宿舍

Dormitory (N)

學生宿舍新館

Student Dormitory (New)

十全一路 94 巷

Ln. 94, Shih-Chuan 1st Rd.

河堤公園

Riverside Park

校園平面圖

Campus Map

表三 實驗場所事故報告單

Appendix 3 Laboratory Incident Investigation Report

<table>
<tr><td>事故單位
Unit involved in accident</td><td></td><td>填表日期
Date</td><td>年 月 日
(YYYY/MM/DD)</td></tr>
<tr><td>事故種類
Type of accident</td><td colspan="3">□重大傷害 Serious injury □輕傷害 Minor injury □財產損失 Property damage or loss □虛驚事故 Near-miss incident □其 他 ( ) Other ( )</td></tr>
<tr><td colspan="2">1.發生時間： 年 月 日 午 時 分 Time of incident:
(YYYY/MM/DD, hour:minute)
2 事故發生對象：□本國員工 □非本國員工
□承攬商(____公司 從事_____作業)Persons involved in the accident:
□ Local employee(s) □非本國員工 Foreign employee(s)
□承攬商 Contractor(s) (Company: _____, engaged in _____ work)
所屬部門：
Affiliated department:
姓名：
Name:
電話：
Tel.:
作業性質：
Nature of work:
3.事故發生地點：Location of the accident:
4.事故程度(可複選)Severity of the accident (multiple options allowed)
□死亡 □殘廢 □造成機器設備毀損 □需申請醫療給付傷害 □輕傷害 □虛驚事故
□其他：
□Death □Disability □Causing damage to machinery and equipment □Injury requiring a medical claim □Minor injury □Near-miss incident □Other:
5.事故發生原因 Cause of the accident
不安全行為：Unsafe behaviors:
□人員注意力不集中 Staff's lack of</td><td colspan="2">6.事故發生經過及現場概況敘述：
Description of the accident occurrence and the accident scene:

7.建議改善事項(對策)：Suggestions for improvements (measures):
□設備改善 Equipment improvement

□作業程序改善 Improvement of the operating procedures

□教育訓練 Education and training</td></tr>
</table>

attention □未使用防護具 Failure to use protective equipment □未依照標準作業程序 Failure to follow the standard operating procedures □誤動作 Accidental action □其他：Other: 不安全狀況：Unsafe conditions: □設備異常啟動 Abnormal startup of equipment □設備安全裝置被破壞 Damaged safety device of equipment □設備安全防護不足 Inadequate equipment safety protection □安全標示不足 Inadequate safety signage □其他：Other: 基本原因 Fundamental causes □未施予教育訓練 Failure to provide education and training □未訂定標準作業程序 Failure to establish standard operating procedures □其他：Other: 事故損失調查(元) Investigation of accident losses ($) 人力損失：____醫療費用： Manpower loss: _____ Medical costs: 財物損失：____其他損失： Property loss: _____ Other losses: 總損失金額： Total amount of loss:	□其他 Other
說明 Note	本表單由實驗場所負責人與職業安全管理師會堪填寫，環安場所存查。 This form shall be filled out jointly by the laboratory director and occupational safety management specialist, and filed at the EHS office.

環安室主任：
Director of EHS Office:

組長：
Division Chief:

職業安全管理師：
Occupational Safety Management Specialist:

實驗場所負責人：
Laboratory Director: