




AREA IX

LABORATORIES

A4. LABORATORY MANUALS



A.4. Laboratory Manuals

	UNIVERSITY OF SOUTHERN MINDANAO		
	PROCEDURE FOR THE CONDUCT OF LABORATORY ACTIVITIES		
Document No.	USM-EDL-002-Rev. 3, 2023.02.03	Rev. No.	3
		Page	1 of 3

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UNIVERSITY OF SOUTHERN MINDANAO		Document No.	USM-EDL-For- Rev. 1.2023.02.03
Procedure for the Conduct of Laboratory Activities		Rev. No.	1 Page 2 of 3

1.0 PURPOSE

This procedure ensures safe and efficient means of conducting academic and non-academic related laboratory activities in the university.

2.0 SCOPE

The procedure pertains only to the laboratory activities in the colleges or research laboratories as needed for academic requirements.

3.0 DEFINITION OF TERMS

- 3.1 **Laboratory Activities** refer to all the activities such as experiments, analyses, or exercises conducted by the students or laboratory personnel.
- 3.2 **Laboratory Personnel** refers to the faculty in charge, Laboratory In-Charge and staff/laboratory aide responsible for the safe conduct of laboratory activities.
- 3.3 **Laboratory Manual** refers to the manual wherein the laboratory activities are listed including the materials and equipment needed in the activity and the procedures and other processes needed in the conduct of the laboratory activities.
- 3.4 **Borrower Slip** refers to the form where students write the information of the materials, chemicals, and equipment to be borrowed.
- 3.5 **Proof of Submission** is evidence in a form of document, photo, video and other kind of material upon which to ascertain that the laboratory activity was conducted.

4.0 REFERENCES

- 4.1 Operations Manual of the Equipment
- 4.2 Laboratory Manual
- 4.3 Laboratory Guide
- 4.4 Material Safety Data Sheet (MSDS)

5.0 RESPONSIBILITY AND AUTHORITY

The faculty in charge and laboratory personnel are responsible for the safe conduct of laboratory activities. The students are responsible in performing the laboratory activities safely with the supervision of the laboratory personnel.

6.0 PROCEDURE DETAILS

- 6.1. General Orientation on the Conduct of Laboratory Activities
 - 6.1.1. The faculty in charge shall ensure that students are properly oriented with the procedures and laboratory safety including the use of appropriate Personal Protective Equipment (PPE).
- 6.2. Pre-Laboratory Discussion of the Laboratory Activities
 - 6.2.1. The faculty in charge shall give directions to the students regarding the procedures and the desired outcome of the laboratory activity.
- 6.3. Preparation of Laboratory Materials, Chemicals, and Equipment
 - 6.3.1. The faculty in charge or laboratory personnel shall facilitate the preparation of the materials, chemicals, and equipment to be used in the laboratory activity.
 - 6.3.2. The faculty in charge or laboratory personnel shall facilitate the proper filling out of the Borrower's Slip (USM-EDL-For-Rev. 1.2023.02.03) upon borrowing of (items) materials.
 - 6.3.3. The students shall borrow the materials, chemicals and equipment and shall leave their IDs to the staff/laboratory aide for safekeeping. They can get their IDs back as soon as they return the materials and equipment they have borrowed.
- 6.4. Conduct of Laboratory Activities
 - 6.4.1. Face-to-Face
 - 6.4.1.1. Students shall follow the procedures stipulated in the Laboratory Manual or Guide for the safe conduct of activities.
 - 6.4.1.2. The conduct of activities shall be done by group but laboratory reports shall be submitted individually following the protocols and procedures of the laboratory concerned.
 - 6.4.1.3. In cases when students break any glass materials or damage any equipment in the laboratory, they shall report it to the faculty in charge and the laboratory personnel. The



UNIVERSITY OF SOUTHERN MINDANAO	Document No.	USM-EDL-001- Rev. 1. 2021. 02. 03
Procedure for the Conduct of Laboratory Activities	Rev. No.	2 Page 3 of 3

students shall be responsible to replace or repair whatever materials they have broken or equipment they have damaged.

6.4.2. Limited Face-to-Face

6.4.2.1. Students shall follow the procedures stipulated in the Laboratory Manual or Guide for the safe conduct of activities.

6.4.2.2. The conduct and submission of activities may be done individually or by group following minimum health standards, protocols and procedures of the laboratory concerned.

6.4.2.3. In cases when students break any glass materials or damage any equipment in the laboratory, they shall report it to the faculty in charge and the laboratory personnel. The students shall be responsible to replace or repair whatever materials they have broken or equipment they have damaged.

6.4.2.4. Student borrower or the leader of the group/class shall be the representative in making a request to the college for the materials, reagents and equipment to be borrowed following minimum health standards.

6.4.2.5. Non-Student Borrower shall be any able person authorized to make a request to the college for the materials, reagents and equipment to be borrowed following minimum health standards.

6.4.2.6. For limited face to face laboratory requirements, students may submit proof(s) of the submission of the assigned activity in a specified time.

6.4.3. Online

6.4.3.1. Students shall follow the procedures stipulated in the Laboratory Manual or Guide for the safe conduct of activities.

6.4.3.2. The faculty in charge shall demonstrate virtually or send videos to be watched by students.

6.4.3.3. Students may conduct laboratory activities utilizing materials available locally in accordance with the procedures.

6.4.3.4. For online laboratory requirements, students may submit proof(s) of the submission of the assigned activity in a specified time.

7.0 RECORDS RETENTION AND DISPOSAL

7.1. Records of this procedure shall be retained for a period of three (3) years for possible review and recall.

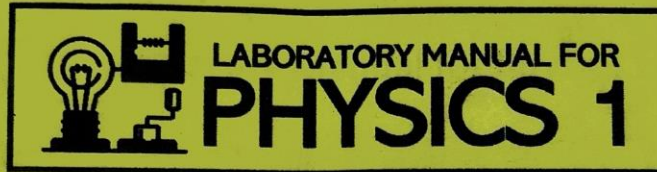
7.2. Disposal shall be done through shredding with the permission and authorization of the CMR.

8.0 FORMS AND RECORDS

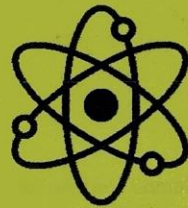
8.1 Request Form (USM-EDL-F15-Rev. 1. 2021. 02. 03)

8.2 Borrower's Slip (USM-EDL-F04-Rev. 1. 2021. 02. 03)

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SY 2022-2023
SY 2023-2024

BIOLOGY LABORATORY

	Laboratory Manual in General Biology	Operation Manual for ACER Projector
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	Laboratory Manual in General Botany	OM for Blender
	Laboratory Manual in General Zoology	OM for Computer Printer
	Lab. Manual in Ecology	OM for Computer, EPSON
	Lab Manual in Microbiology	OM for Diameter Tape
		OM for digital light meter
		OM for Digital Rain Gauge

		OM for DLP
		OM for DO Meter
		OM for Electric Analytical Balance
		OM for Electrophoresis
		OM for Emergency Light
		OM for Furnace, Muffle
		OM for Homogenizer
		OM for Laser Jet Printer
		OM for Kymgraph
		OM for Laptop , ACER
		OM for Microtome, Rotary
		OM for OHP (ELMO)
		OM for Oven (Heraceus)
		OM for Oven (WTB Binder)
		OM for Oven, Microwave (GE)
		OM for pH for food tasting
		OM for Piltz Heating Mantle
		OM for pressure cooker
		OM for Printer, Laser Jett
		OM for Refrigerator, Kelvinator
		OM for Respirometer
		OM for Spectrophotometer
		OM for Stereoscope with zoom lens
		OM for Thermostatic Water bath
		OM for TV (JVC colored)
		OM for TV, Flat (JVC Colored)
		OM for Windscope model 3105z

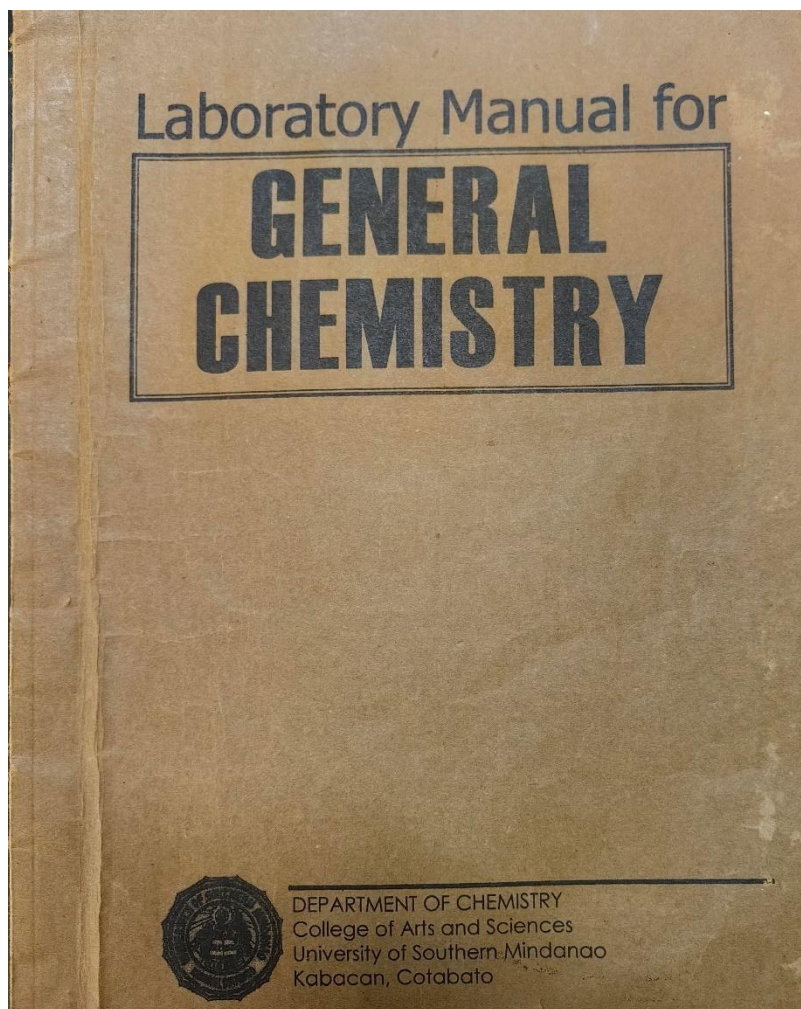
CHEMISTRY LABORATORY		
	Laboratory Manual in General Chemistry	Operation Manual for Centrifuge Damon/IEC
	Laboratory Manual in General Chemistry II	OM for Distilling Apparatus (Distinction Water Still)

	Laboratory Manual in Organic Chemistry I	OM for Eco Ph
	Laboratory Manual in Organic Chemistry II	OM for Electronic Balance (Sartorius)
	Laboratory Manual in Biochemistry	OM for Flame Photometer
		OM for Furnace , Hot Pack, Electron Muffle
		OM for Furnace ,Thermolyne (Barnstead)
		OM for High Temp-Bath
		OM for Hot Stirrer, High Magmix
		OM for Melting Point Apparatus
		OM for Microscope
		OM for Moisture Meter
		OM for Oven(Heraeus)
		OM for Pilz Heating Mantle
		OM for Polarimeter
		OM for Portable Electronic Balance (Ohaus)
		OM for Portable Pyrometer, Thermolyne
		OM for Pressure Cooker
		OM for Refractometer, Abbe-3L (Bausch & Lomb)
		OM for Sauter Balance
		OM for Spectrophotometer(Spectronic 23)
		OM for Thin Layer Chromatograph

PHYSICS LABORATORY

	Laboratory Guide in Physics 212	1. OM for Electronic Circuit
	Laboratory Guide in Physics 214	2. OM for Hand Drill
	Laboratory Guide in Physics 222	3. OM for Multi Tester
	Laboratory Guide in Physics 224	4. Om for Press Drill
		5. OM for Refrigerator (Kelvinator)
		6. OM for Respirometer
		7. Om for Spectrophotometer
		8. OM for Stereoscope with zoom lens
		9. OM for Thermostatic water bath
		10. OM for TV (JVC colored)
		11. OM for TV, Flat (JVC colored)
		12. OM for JDS

PHYSICAL EDUCATION LABORATORY		
	PE 111- Foundation of Physical Education	Policies and guidelines on the use of Physical Education units are posted on the wall of lab rooms
	PE 211 – Table Tennis	
	PE 211 – Lawn Tennis	
	PE 211 – Team Sports (Recreation)	



Laboratory Manual
in
Botany

2025

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2025



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COMPUTER LABORATORY OPERATIONS HANDBOOK

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TABLE OF CONTENTS

I.	GENERAL OVERVIEW	
	Introduction	1
	About Computer Laboratory	1
	About the Laboratory Assistants	1
II.	DUTIES AND RESPONSIBILITIES	
	Duties and Responsibilities of Lab Assistants	2
	Work Duties	2
	Before and During Work Duty	3
	Closing Laboratory	3
	Power Failures	3
	Emergency Cases	4
	Identification Cards	4
	Duty Time Logbook	4
	Access to Any Computer Lab	4
	Dealing with Faculty	5
	Dealing with Users	5
III.	LABORATORY OPERATIONS	5
	Computer Classes	6
	Using a Computer Workstation	6
	Computer Configuration	6
IV.	POLICIES AND GUIDELINES	
	Computer Laboratory Policy	7
	Computer Lab Reservation Guidelines	8
	Responsibilities of Laboratory Assistants (Student Paid Labor)	8
V.	HARDWARE AND SOFTWARE MAINTENANCE	9
VI.	APPENDIX	10