

**SOP FOR GEOGRAPHY AND PHOTOGRAMETRY LABOR TOOLS,
DEPARTMENT OF GEOGRAPHY**



Laboratory

**DEPARTMENT OF GEOGRAPHY
FACULTY OF SOCIAL SCIENCE
STATE UNIVERSITY OF PADANG
2020**



**THE MINISTRY OF TECHNOLOGY RESEARCH AND HIGHER
EDUCATION
STATE UNIVERSITY OF PADANG
FACULTY OF SOCIAL SCIENCE
DEPARTMENT OF GEOGRAPHY**

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**STANDARD OPERATIONAL PROCEDURE (SOP)
USE OF CARTOGRAPHY & PHOTOGRAMMETRY LABORATORIES
STATE UNIVERSITY OF PADANG**

A. Definition

The Cartography & Photogrammetry geography laboratory is a geography academic facility that is used by students or lecturers for practicum and research activities.

B. Destination

1. Optimizing laboratory management and all the resources in it so that it is productive, quality and reliable. Providing excellent service as a center for scientific inquiry, development and research applications in the field of Cartography & Photogrammetry geography.
2. As a guideline for the use of laboratories for the implementation of practicum and research for students and lecturers.
3. Simplify the control or supervision of laboratory equipment.

C. Scope.

This laboratory equipment lending procedure only applies to students, lecturers and outsiders who have received permission to borrow laboratory equipment with the terms and conditions that are enforced is a guarantee of laboratory equipment borrowing, namely in the form of user identity (KTM, KTP, and user's SIM) user identity. will be held as long as the user borrows the laboratory equipment and will be returned after returning the laboratory equipment. In addition, lending laboratory equipment uses an official letter from the institution or lecturer in charge related to the person in charge's signature or activities addressed to the laboratory head who has received ACC from the responsible lecturer.

The provisions that apply are

- a) The laboratory equipment lent is in accordance with the loan letter
- b) The length of time for borrowing laboratory equipment is as stated in the loan letter.
- c) Laboratory assistants borrow and return laboratory equipment on weekdays, starting at 09.00-15.00
- d) If the return exceeds the time limit given without confirmation to the Laboratory, a fine will be imposed. A fine in the form of money of IDR 100,000 / tool / day.

D. Procedure

1. Mechanisms and Procedures for Borrowing Tools

Mechanisms and procedures for borrowing laboratory equipment in the laboratory are as follows:

- a) The user / student makes an official letter of application for borrowing Laboratory equipment with the signature of the chief executive or person in charge of activities to the Laboratory Coordinator.
- b) The letter that has been created by the user is shown to the Laboratory Coordinator to be coordinated whether on the D day the Laboratory equipment is borrowed or not.
- c) If the laboratory equipment is used for other purposes, the letter is returned to the user to be replaced when the borrowing time or the loan is canceled, if the laboratory tool is not used, the letter is returned to the user and the user continues the borrowed letter to be submitted to the Laboratory Coordinator
- d) Submit a letter of application for borrowing the tool that has been signed by the chief executive to the laboratory assistant.
- e) The user leaves an identity card (KTM / SIM / KTP that is still valid), a number that can be contacted by the user and the person in charge of the activity, in accordance with the provisions.
- f) Laboratory assistants take laboratory equipment that will be borrowed by users / students.
- g) Users / students and laboratory assistants check the condition of the laboratory equipment to be borrowed.
- h) Users / students get Laboratory equipment in accordance with what was borrowed on condition that the return of Laboratory equipment must be in accordance with the initial condition of the tool when it was loaned.

2. Mechanism and Procedure for Returning Laboratory Equipment

Mechanisms and procedures for laboratory equipment in the Study Program are as follows:

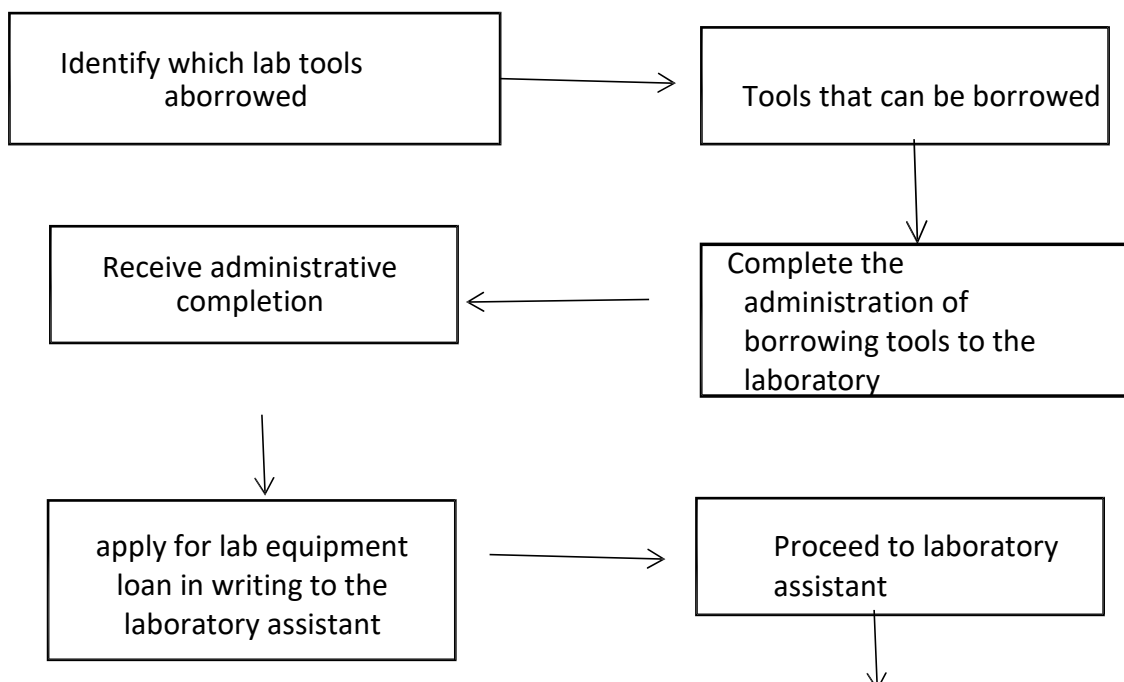
- a) Student users return Laboratory equipment to the Laboratory Assistant
- b) Laboratory assistants and student users check the condition of the laboratory equipment that has been borrowed, if the condition of the laboratory equipment is not in accordance with the initial conditions, the user must replace the laboratory tool which is the same as the previous tool specifications and return to step 1. If the condition of the laboratory equipment is in accordance with the initial conditions before borrowing then go to step 3.
- c) Laboratory assistants receive laboratory equipment that has been borrowed.
- d) An identity card that has been returned by the dean staff to student users.
- e) Done.

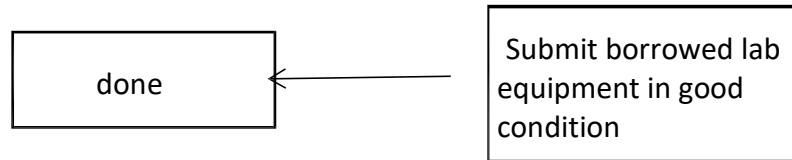
E. RELATED PARTIES

1. Chairman of the Department of Geography
2. Head of the Remote Sensing Technology Study Program
3. Person in Charge of Laboratory
4. Laboratory Staff
5. Users (students, lecturers and private parties)

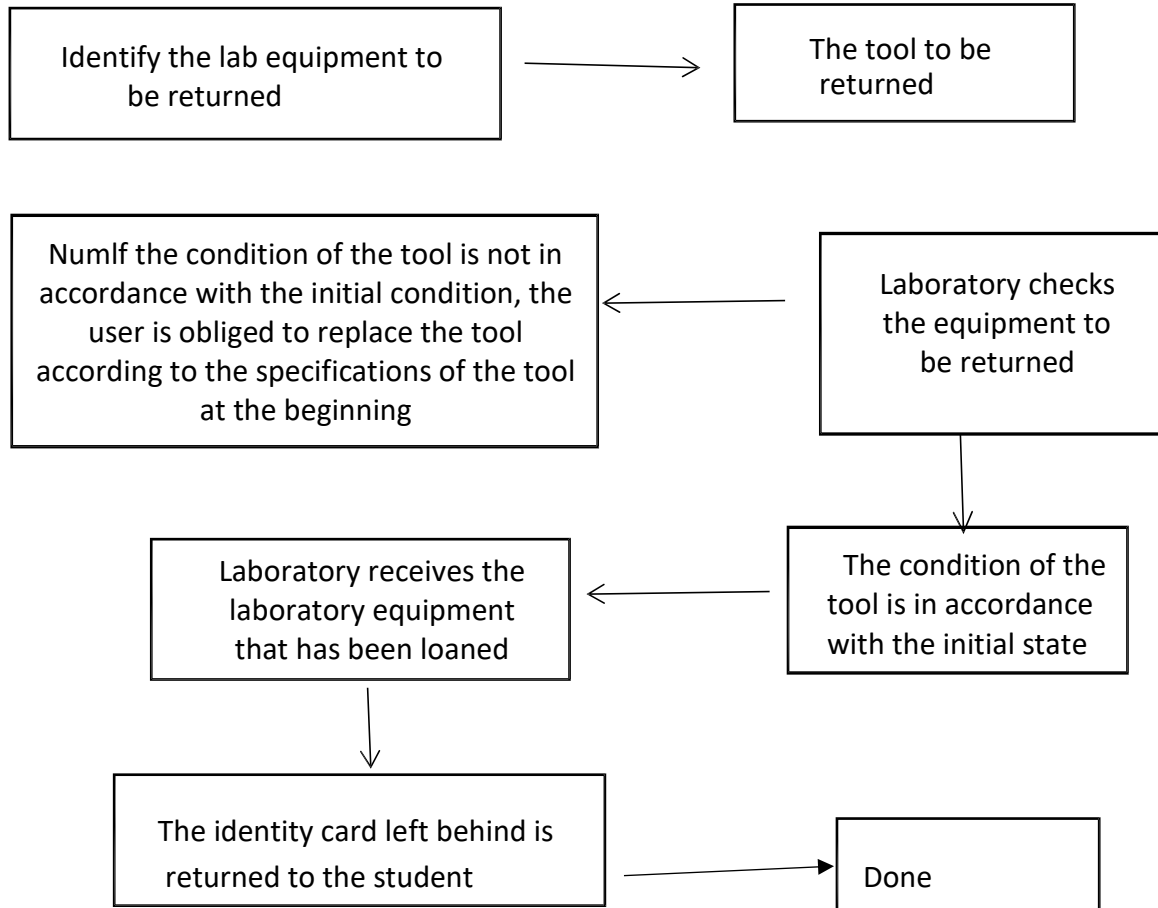
F. Flowchart of Borrowing, Return of equipment and Security, Health and Laboratory Practicum Safety by Students.

1. Borrowing Lab Equipment by Students





2. Return of Lab Equipment by Students



G. Penalty

1. Practicum participants who do not comply with the rules and regulations are not allowed to enter the laboratory.
2. Practicum participants who come late, do not bring or enough practicum material (not according to the agreement), may not participate in practicum activities.
3. If the practicum participant moves or uses the practicum equipment that is not in accordance with what is stated in the practicum instructions and the tool lending file, the practicum activities carried out will be stopped and the practicum concerned is canceled.
4. Practicum participants who have not attended the practicum program for three times are declared void and must repeat in the following semester, unless there is a

statement from the Head of the Geography Department / Head of the Geography Laboratory.

5. Practicum participants who have lost, damaged or broken practicum equipment must replace according to the same equipment specifications, with the agreement between the Assistant, Practicum Assistant and the Head of the laboratory. Percentage

replacement of lost, damaged or broken tools is adjusted to the type of tool or the level of damage to the tool.

6. If the practicum participant up to the specified time period cannot replace the tool, the practicum participant may not take the final semester exam (UAS); and if the practicum participant is unable to replace lost, damaged or broken equipment because the price of the equipment is expensive or the equipment is not on the market, the replacement value is determined based on the agreement between the head of the laboratory, the head of the geography department and the practicum participant (or the borrower)



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SSTANDARD OPERATIONAL PROCEDURE (SOP) of
Laboratory Tertiary Administration.

1. Fill in the attendance list in the visit book
2. Wearing polite, neat clothes and shoes (no sandals are allowed)
3. Wear a lab coat and preferably long sleeves.
4. Be polite and courteous when in the room
5. Mutual respect between students, lecturers and those around the laboratory.
6. Keeping the laboratory clean and comfortable.
7. Not allowed to carry items that can trigger fires and sharp objects unless permitted during the learning process.
8. Not allowed to eat in the laboratory.
9. Do not make noise in the laboratory.
10. Do not litter.
11. All collection of laboratory equipment and materials must be in accordance with the borrowing procedure.
12. The laboratory is opened according to a predetermined schedule
13. Read, understand, and understand every procedure in the use of laboratory facilities and services.



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STANDARD OPERATIONAL PROCEDURES (SOP)

Procedures for Laboratory Use

1. Lecturer activities

- a. Lecturers coordinate with the head of the laboratory, through laboratory assistants.
- b. Laboratory assistants / laboratory assistants provide complete equipment to be used by lecturers.
- c. If possible, laboratory assistants / laboratory assistants can assist lecturers' activities.
- d. After the activity, lecturers and laboratory assistants / assistants tidy up the equipment to its original condition.

2. Student services

- a. Students make a letter requesting the use of a physical geography laboratory for lecture purposes to the head of the laboratory with a copy of the head of the UNP geography department
- b. The head of the laboratory coordinates with the laboratory assistant / laboratory assistant and students with an interest in determining the laboratory use schedule.
- c. Students can ask the laboratory assistant for information about the media to be used, the completeness of the set, etc.
- d. Students get a usage schedule and use it at a predetermined time
- e. During use, before using the laboratory, students contact the laboratory / laboratory assistant to be able to prepare the equipment needed.
- f. Students carry out activities with supervision from laboratory assistants / laboratory assistants.

- g. After the activity, students put the equipment back in order to its original condition
- h. The laboratory assistant checks the completeness of the equipment after use.

3. Laboratory maintenance

- a. The laboratory assistant checks all laboratory equipment every month.
- b. The laboratory assistant fills in the laboratory equipment condition form.
- c. The laboratory assistant records the damaged equipment and puts it on the damaged equipment form
- d. The laboratory assistant checks whether the equipment can be repaired on its own, repair it outside, or replace it with a new one
- e. The laboratory assistant notifies and asks for the approval of the head of the laboratory and the head of the geography department of FIS UNP.



USE OF CARTOGRAPHY AND PHOTOGRAMETRY LABORS
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Department of Geography	Tool Name: MIRROR STEREOSCOPE
Standard Operating Procedure Tool Maintenance	

A. Destination

- a. Mirror Stereoscope is a tool for viewing dimensional images of the land surface in aerial photographs measuring 21 X 21 cm.

B. Equipment and Materials


- a. Mirror Stereoscope
- b. Aerial Photo
- b. Spidol OHP Pen
- c. Mica plastic
- d. Mica isolation
- e. Eraser
- f. Ruler
- g. Interpretation Desk

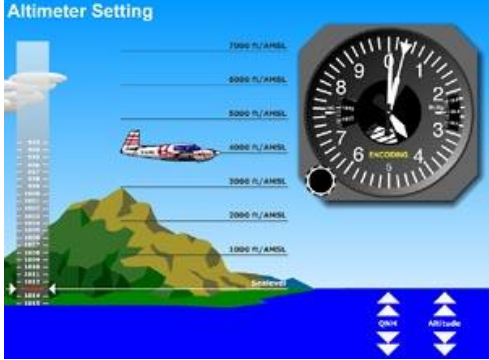
C. Implementation Procedure

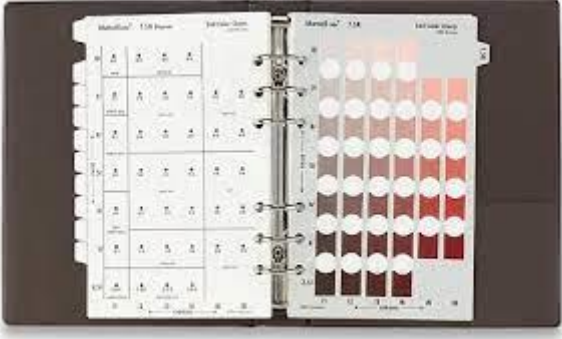
1. The mirror stereoscope is taken from the cupboard
2. Put on the interpretation table, open and inspect
3. A mirror stereoscope is taken, holding the left and right handles from inside the box
4. The stereoscope leg is straightened
5. Lid glass stereoscope mirror taken with sideways way.
6. Place the binocular telescope on top of the mirror stereoscope to see as much as 10X as much as it sees
7. If you want to see or know the length, width, and height of an object, place it under the stereoscope mirror ruler which is called a parallax bar ruler.
8. Use aerial photography with care, writing on aerial photographs should be coated with mica plastic or tracing paper
9. Delineation directly over aerial photography is strictly prohibited


1. Things that should not be done

2. It is prohibited to denote directly in aerial photographs
3. Never - ever touch the mirror on the left and right.
4. Touching the mirror with your hands is not allowed because it can peel off, to clean the glass using a cotton ball.

Department of Geography	Tool Name: AIR PHOTO INTERPRETATION	
<p style="text-align: center;">Standard Operating Procedure Tool Maintenance</p>	 <p>The image shows a workspace for aerial photo interpretation. It features a large aerial photograph of a city area, possibly Manila, laid out on a light-colored surface. A ruler is placed horizontally across the top of the photo. To the left, a pen and an eraser are visible. The photo is held in place by a strip of tape along its bottom edge. The overall scene is well-lit, likely from a window, as indicated by the shadows and highlights on the surface.</p>	
<p>A. Destination</p> <ul style="list-style-type: none"> a. Aerial photography interpretation is the job of recognizing objects through aerial photography <p>B. Equipment and Materials</p> <ul style="list-style-type: none"> a. Aerial photo b. Mica plastic c. OHP markers d. Mica isolation e. Eraser f. Ruler g. Interpretation table h. Ballast <p>C. Implementation Procedure</p> <ul style="list-style-type: none"> a. Determine your base b. Determine the base of your object c. Place two overlapping aerial photographs under the mirror stereoscope with the distance corresponding to the base distance of the Saudar object d. Interpret aerial photographs using the SOP guide using a mirror stereoscope 		
<p>D. Things that should not be done</p> <ul style="list-style-type: none"> a. Do not drip an acidic chemical solution on the photo b. Do not do the interpretation directly on photo paper b. Do not delete the object in the photo c. Do not remove the tape stuck to the photo from the back of the photo 		

<p>Department of Geography</p>	<p>Tool Name: ALTIMETER (Height Measurement Place)</p>
<p>Standard Operating Procedure Tool Maintenance</p>	 <p>The image shows a digital altimeter interface. On the left, a vertical scale ranges from 0 to 7000 ft AMSL in increments of 1000. A 3D terrain map below the scale shows a mountain range with an airplane flying above it. On the right, a circular altimeter gauge displays a needle pointing to approximately 1000 ft. Below the gauge, there are two buttons labeled 'QNH' and 'Altiitude' with up and down arrows.</p>
<p>A. Destination</p> <p>a. The altimeter is used to measure the height of the place from sea level</p> <p>B. Equipment and Materials</p> <p>a. Altimeter</p> <p>C. Implementation Procedure</p> <p>a. Take the position on the land where the height will be measured</p> <p>b. Read on the altimeter</p>	
<p>D. Things that should not be done</p>	

<p>Department of Geography</p>	<p>Tool Name: SOIL COLOR (Munsell Soil Color Chart)</p>
<p>Standard Operating Procedure Tool Maintenance</p>	
<p>A. Destination</p> <ul style="list-style-type: none"> a. The Munsel Color cart is used to set the color of the soil <p>B. Equipment and Materials</p> <ul style="list-style-type: none"> a. Munsel Color Cartb. Soil Example <p>C. Implementation Procedure</p> <ul style="list-style-type: none"> a. Take a lump of soil in wet or dry conditions b. Match the soil color to the color in the Munsell Soil Color Char book <p>D. Things that should not be done</p> <ul style="list-style-type: none"> a. Do not drip acidic chemical solutions on the Soil Color Book. B. Not allowed to cross and color the Earth Color Book. 	

<p>Department of Geography</p>	<p>Tool Name: MISTAR PARALAK (paralak bar)</p>
<p>Standard Operating Procedure Tool Maintenance</p>	
<p>A. Destination a. Parallax ruler is a ruler used to measure the length / distance of an object in aerial photographs with a fairly high accuracy (0.01 mm)</p> <p>B. Equipment and Materials a. Aerial Photo b. Parallax Ruler</p> <p>C. Implementation Procedure a. Parallax ruler is a ruler used to measure the length / distance of an object in aerial photographs with a fairly high accuracy (0.01 mm)</p>	
<p>D. Things that should not be done a. Never - ever touch the mirror on the left and right of the parallax bar.</p>	

STANDARD OPERATIONAL PROCEDURE (SOP)
Occupational Health and Safety (K3) in the Laboratory

A. Possible Hazards in the Laboratory

1. Fire Hazard

Risk of fire (source: chemicals, stove) disinfectants which may be flammable and toxic. A fire occurs when there are 3 elements together, namely: oxygen, combustible materials, and heat.

As a result:

- The onset of fires with burns resulting from minor to severe, even death.
- Poisoning arises due to carelessness.

Prevention:

- Provide fire extinguisher in every room.
- Good storage system for combustible materials.
- Control of the possibility of a fire.
- Fire alert system
 - A manual that allows one to immediately declare a danger sign.
 - Automatic which finds fires and provides alerts automatically.
- There is a way to save yourself.
- Fire fighting and equipment.
- Proper and safe storage and handling of chemicals.

2. Electrical Hazard

- Pay attention and study the places of the power source (socket and circuit breaker) and pay attention to how to turn it on and off.

If you see any damage that is potentially dangerous, report it to the laboratory assistant or laboratory staff.

- Avoid accidental areas or objects that could pose an electric hazard (electric shock / shock), for example chipped netting cables, etc.
- Do not do something that could pose an electrical hazard to yourself or others.
- Dry wet body parts such as sweat or the rest of the ablution water.
- Always be aware of electrical hazards in every activity in the laboratory.
- Accidents due to electrical hazards that often occur are electric shocks.

The following are things a laboratory user should follow when this occurs:

- Do not panic.
- Turn off all electronic equipment and power sources.
- Help laboratory users who have been electrocuted to remove themselves from the power source.
- Notify and ask for help from laboratory assistants or people around you about the occurrence of accidents due to electrical hazards.



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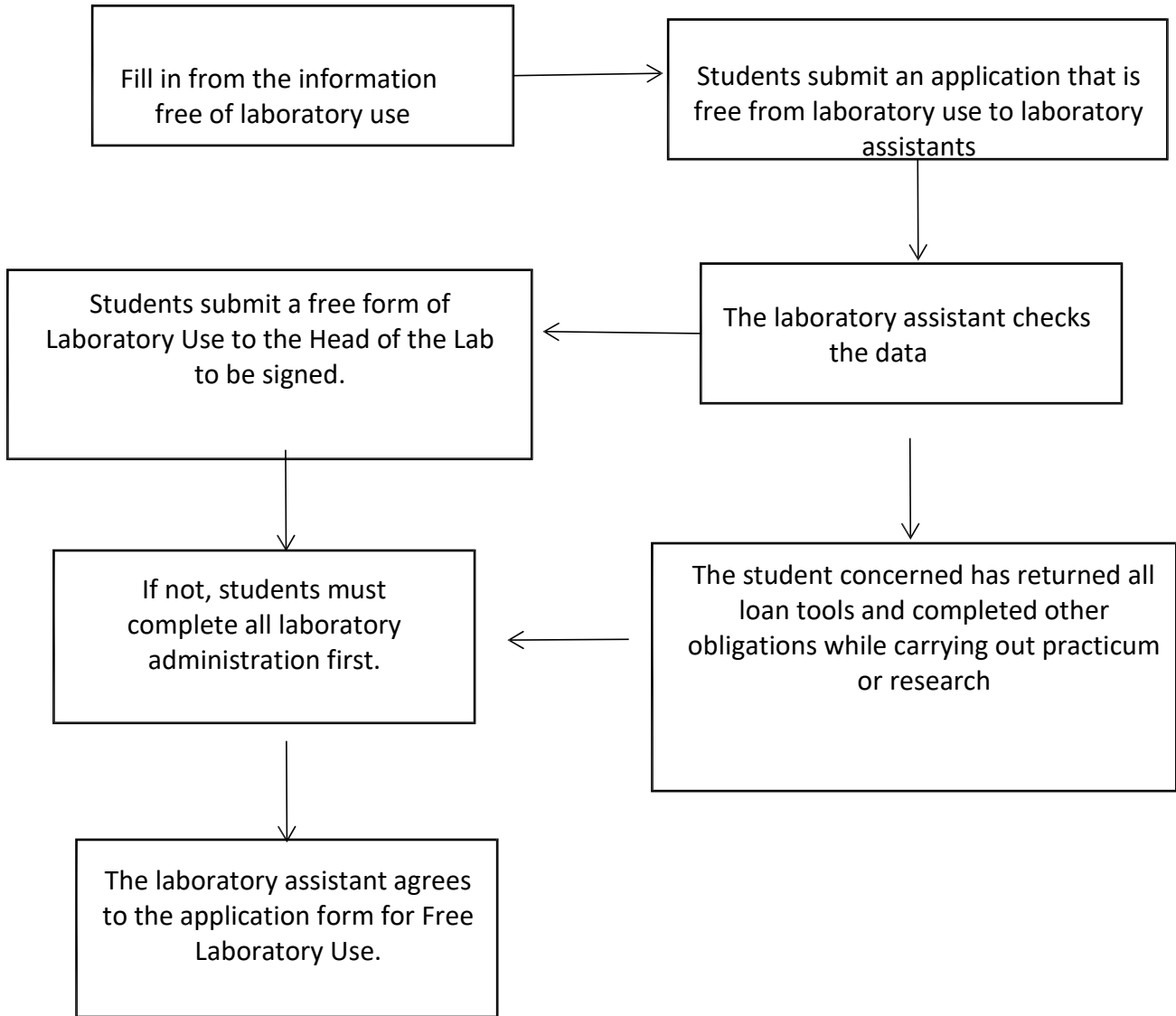
Making Free Laboratory Letters

A. Preparation of Free Laboratory Letters

Permohonan done directly in the physical geography laboratory.

1. Students fill out the information form that is free of laboratory use.
2. Students submit an application that is free of laboratory use to the laboratory assistant
- .3. The laboratory assistant conducts data check, whether the student has returned all equipment loans and completed other obligations while carrying out practicum or research, if not the student must complete all laboratory administration first.
4. The laboratory assistant approves the free application form for Laboratory Use for Students who have completed all loans and payments at the lab.
5. Students submit blanks already free of laboratory use to Head of Lab to be signed.

A. Flowchat of Laboratory Free Letter Making





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Physical Geography Laboratory Free Information

Student / I data below;

Name:

NIM:

Place / Date of Birth:

Address:

Study program:

The student / I mentioned above does not have the responsibility for the tools / materials belonging to the physical geography laboratory of the State University of Padang

Thus this letter of decree should be used properly.

Padang, 20

Head of the physical geography
laboratory Sgd

(.) NIP.



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Sthe line of the Loan Application
Equipmentn Laboratory By Students

Dear

Head of Laboratory

Physical Geography

With respect,

We, the undersigned

Name:

NIM:

Apply for laboratory equipment for the geography study program to carry out testing
(thesis / research / community service) at: Laboratory:

WaLoan date:

Loan time:

Used at:

Equipmentn borrowed 1.

2.

Thank you for your willingness and willingness to give permission.

Padang,

Who filed

(.) NIM



Berita Laboratory
Equipment Borrowing
Event by Students

Pada today, date located at the
laboratory

The handover of the laboratory equipment borrowing has been carried out below:

- 1.....
- 2.....
- 3.....
- 4.....

Afterh tested the tools above, we all know and state that all the tools tested are in
good condition and functioning normally.

Who submit,

Lalab assistant Padang,

College student,