University — Faculty of Sciences
1st Year (L1) — Module: Cell Biology

TP1. Laboratory Protocol and Rules

General guidelines for laboratory practical sessions

This document presents the safety rules, expected behavior, and the methodology for writing the lab report that must be followed at every practical (lab) session. It must be read before the first session and observed throughout the semester.

1. Before Entering the Laboratory

Attire

- Lab coats are mandatory, must be buttoned, clean, and used only in the laboratory.
- Long hair must be tied back.
- Remove rings, bracelets, and other bulky jewelry before any manipulation.

Personal equipment to bring

- This protocol or the lab handout corresponding to the session.
- Notebook or scratch paper, pencil, eraser, colored pencils.

⚠ Strict prohibitions before entering

Eating, drinking, chewing gum, or using a mobile phone is forbidden inside the lab room.

2. Conduct and Safety During the Lab Session

General rules

- Work only at your assigned bench and keep it clean and tidy at all times.
- Listen carefully to the instructor's directions before starting any procedure.
- Read the entire protocol for the procedure before beginning, to understand each step.
- Never improvise or modify a protocol without the instructor's approval.
- Work calmly, avoiding abrupt movements or unnecessary walking around the room.
- Immediately report any anomaly to the instructor (broken glass, spilled product, unusual smell, injury, feeling unwell).

Handling glassware and equipment

> **⚠ Essential rule**
>
> Never touch, move, or use equipment (glassware, microscope, apparatus) that has not been explicitly assigned to you or whose use has not been authorized by the instructor.

- Check the condition of glassware before use (cracks, chips) and report any defect to the instructor — never use damaged glassware.
- Handle glassware carefully, with both hands if necessary, away from the edge of the bench.
- Never pipette a liquid by mouth: always use a pipette bulb or an automatic pipettor.
- Clean and put away any equipment used after each procedure, in its designated place.
- In case of broken glass, do not pick up the pieces with bare hands: notify the instructor, who will indicate the procedure to follow.

Using the microscope

- Carry the microscope with both hands (one under the base, one on the arm), never with a single hand.
- Always begin observation at the lowest magnification.
- Never force the focus adjustment or the movement of the stage.
- Clean the objective lenses and slides only with the lens paper provided (never with a cloth or your fingers).

Chemical products and reagents

- Never handle a chemical product without having read its label and without explicit instructions from the instructor.
- Never smell a product directly; if needed, waft the vapor toward yourself with your hand.
- Always close reagent bottles immediately after use.
- Never pour excess product back into its original bottle (risk of contamination).

3. In Case of Accident or Emergency

- Stay calm and immediately notify the instructor or the person in charge of the room.
- In case of eye or skin exposure: rinse thoroughly with clean water for at least 15 minutes, without delay.

4. At the End of the Session

- Clean and put away all equipment used at your bench.
- Dispose of waste in the appropriate bins (regular waste, broken glass, chemical or biological waste as indicated by the instructor — never mix them).
- Wipe and disinfect the bench if necessary.
- Wash your hands thoroughly before leaving the room.
- Remove your lab coat before leaving the laboratory.

5. Writing the Lab Report

The lab report is a scientific document: it must be clear, precise, complete, and honest (it reports what was actually observed, not what was expected).

> ✏ **The pencil rule**
>
> All diagrams, observational drawings, and labels must always be done in pencil (never in pen). This allows a line to be corrected, proportions to be respected, and a label to be redone cleanly if needed. Written text (introduction, discussion, conclusion) may be written in pen.

Expected structure of the lab report

Section	Expected content
Heading	Name, surname, group, date, title of the lab session.
Objective(s)	In one or two sentences: what is this lab session trying to observe, verify, or measure?
Materials and method	List of materials used and a concise summary of the protocol followed (no need to copy the entire handout).
Results / observations	Labeled diagrams in pencil, data tables, factual description of what was observed — without interpretation at this stage.
Discussion / analysis	Interpretation of the results, comparison with what was expected, explanation of any discrepancies or sources of error.
Conclusion	A concise answer to the lab session's original objective.

Rules for observational diagrams

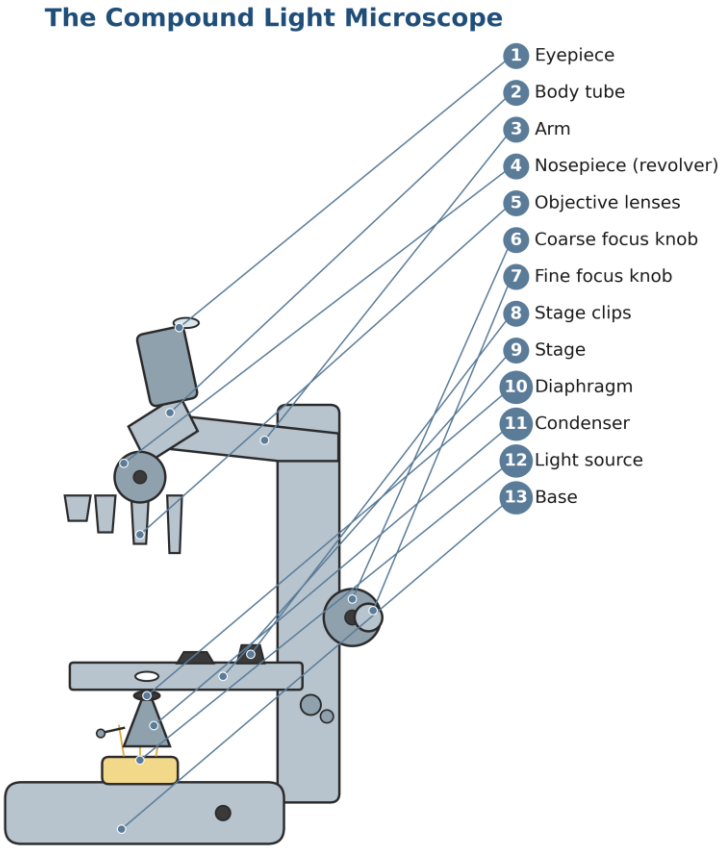
- Always drawn with a well-sharpened pencil, never in pen or in color for the lines.
- The drawing should be large enough (at least a third of a page), with fine, clean lines, without going over the same line multiple times.
- Label lines drawn with a ruler, horizontal, and never crossing one another.
- Each label must be written legibly, aligned with its leader line.
- Always indicate the title of the diagram, the magnification used (e.g., "×400")
- Only draw what is actually observed under the microscope — never copy a diagram from a textbook.

What not to do

- Do not use pen, marker, or highlighter for diagrams and labels.
- Do not invent or "adjust" results that were not actually observed.
- Do not copy another team's lab report: each observation must reflect your own work.
- Do not submit an incomplete report or one written hastily at the end of the session: take notes throughout the lab session.

Appendix — The Compound Light Microscope

Before your first microscope observation session, take the time to identify each of the following parts on the microscope at your bench. You will be asked to identify them at the beginning of the lab session.



Points to watch

- The objective lenses (5) are arranged from lowest to highest magnification; observation always begins with the lowest one.
- The coarse focus knob (6) is used for approximate focusing, the fine focus knob (7) for precise focusing — never force either one.
- The diaphragm (10) adjusts the amount of light; it must not be confused with the focus controls.

End of protocol — Good luck and have a productive lab session!