Conducting Laboratory Workshop

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Objectives

By the end of this workshop, you should be able to describe:

1. **Common issues** in conducting Lab

2. **Three phases** in conducing Lab sessions: Before, During and After conducting Lab

3. Specific issues in conducting lab - **Departmental Group Discussion**

Common Issues

1. Preparation
2. Attitude
3. Communication
4. Marking & Grading Lab reports

Common Issues

1. Preparation

- Lab safety e.g. wear lab coat, goggles
- Procedures of experiments e.g. just read like a student, unable to answer questions, superficial
- Knowledge of Lab materials e.g. lack of understanding of the background theories, pre-lab reading

2. Attitude

- Punctuality in both pre-lab and lab sessions e.g. Late or Rush to leave
- Breakfast in the Lab
- Attitude deteriorates

3. Communication

- Professionalism e.g. relationship with students, don't work on their projects
- Language e.g. use ppt slides, pictures

4. Marking & Grading Lab reports

- Too easy, Too tough
- Just based on model answers, lack of judgment

Three Phases of a Lab Session

Before, During, After

Quiz

1. Why do TAs have to pre-run the lab?

2. What should TA do during the laboratory?

3. When should you return the lab report?

4. Can you bring coffee or drinks to lab? Why or why not?

5. When is a good time to eat breakfast/lunch?

Before Lab

Before Lab

- Contact and meet the course instructor to discuss the **learning objectives** of the lab work.
- Be clear about the **lab dates and time**.
- Get familiar with all the **equipment and materials** to be used.
- Assist in calibration of the **instruments** before the lab takes place. (Arrive early)

Before Lab – Pre-run

- **Pre-run the lab** and find out the possible lab results in order to assess students' work.
- Prepare **supplementary notes** to student if you think the lab manual is not clear enough.

Before Lab – Safety Precaution

- Find out the **potential danger** associated with the experiment. Be clear about:
  - The **procedures** for handling emergencies.
  - **Location** of the nearest first-aid kit, eye wash and hospital, etc.
  - Where the emergency exit and route is.
- Always remember the university emergency phone number - _ _ _ _

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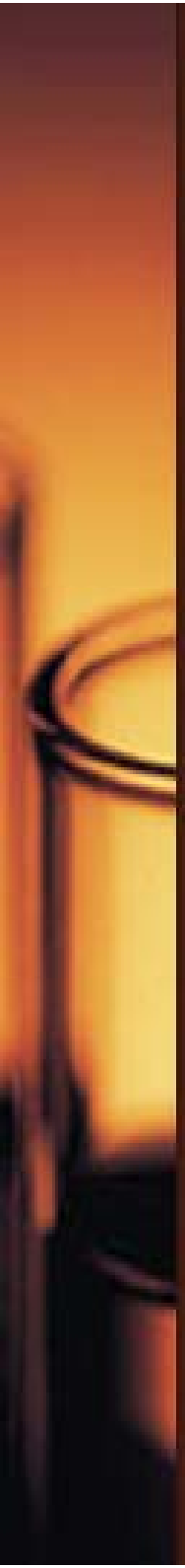
Prepare to conduct a lab

- Am I able to do the lab myself before the class?
- Am I familiar with the equipment?
- What are the safety considerations?
- Would it help if I gave my students a handout?
- How can I link this lab to the professor's lecture?



During Lab

During Lab

- Provide **clear and complete instructions** at the very beginning of the lab session.
- Try to break down the demonstration into several **meaningful steps**.
- Explain and emphasize the **main points**.
- Point out the **common mistakes** of the lab work.

During Lab

- **Supervise** the students throughout the entire lab period
  - Learn the names of your student.
  - Walk around
  - Watch out for accident.

- Have a good **time control** so that the students can finish the lab on time.

During Lab

- Never **lie**. You are not expected to know everything.
- **Encourage** your students to try new things
  - Learn from students
  - Reserve enough time
- **Assessing** students' performance in labs
  - Students' preparation
  - Ability to perform lab techniques
  - Understanding of the lab procedures
  - Students' observance of safety standards

After Lab

After Lab

- **Grading Lab Reports**
  - Check with faculty for overall depth and critical content
  - Give back to student ASAP
  - Provide feedbacks and comments
- **Post-lab consultation**

  Write down notes for future improvement and share them with the course instructor, technicians and demonstrator.

Departmental Group Discussion