

# Keeping a lab notebook

## Research Methodology

### Lecture 1:

**Practical guidelines and examples for keeping  
trace of lab activities in engineering or  
industrial research and development projects**

# Outline

- What is a lab notebook
- Why to keep a lab notebook
- Medium
- Guidelines and examples
  - ✓ Format
  - ✓ Content

# What is a Lab Notebook?

Cannot be altered

In detail/ exhaustively:

- every day
- 'everything'

dated

Diary/journal

A permanent, complete, chronological record of what is related to a research project.

Experiments:

- performed and
- programmed

Research protocols

Objectives / goals

Ideas:

- yours,
- from discussions
- from work from others

Thoughts / hypotheses

Data – Analyses - Results

# Why to keep a lab notebook

- To remember what you have done
- To allow a third person to verify or reproduce the procedures
- To support your work of publication
- To prove you have adhered to good practice
- For security reason (when dealing with dangerous products)
- For legal reasons (US patent office, legal disputes)

# Medium

## → Paper

- ✓ Bound notebook
- ✓ Pre-numbered pages (if not you have to number the pages yourself)
- ✓ Place for date and signatures on each page
- ✓ Use ball point or gel pen

## → Electronic

- ✓ Not considered here
- ✓ E-labjournal (<https://www.elabjournal.com/>)!

# Guidelines: structure

- Cover and front page
- General table of content
- Table of content for protocols
- Glossary
- Chronological record of research/lab activities
- Do and don't

# Guidelines: formatting a lab notebook

## Cover and title page

### Cover:

Project title

Your name

Course number

### Front page:

Same as cover

Address

Phone number

# Guidelines: formatting a lab notebook

## Table of content

Reserve 2 to 3 pages

For every entry:

Title of experiment

Date of experiment  
begin

Page number

Instructor signature

Table format

*** this page reserved for contents ***	page 1
<u>TABLE OF CONTENTS</u> (chronological order)	
Primary cell culture of chick pectoralis major.....	1-3, 7-11, 14-15, 27-33
SDS-PAGE of myosin light chains (practice).....	4-7
Media for cell culture - sources and formulas.....	11
2-Dimensional electrophoresis of myosin light chains.....	12-14, 21-24
Primary culture of chick superior cervical ganglion cells.....	16-20, 25-27, 34-38
Co-culture chick muscle & nerve.....	39-43



# Guidelines: formatting a lab notebook

## Table of content for protocols

Reserve 2-3 pages

For every entry

- Name of the protocol

- Date it has been entered in the notebook

- Page numbers

- Instructor's signature

Table format

# Guidelines: formatting a lab notebook Glossary

Reserve 2-3 pages

For every entry

- Term/abbreviation explained

- Definition – Notes

- Instructor's signature

Table format

# Guidelines: formatting a lab notebook

## **Experiment records**

Title

Date

Notes, thoughts, literature references

Objectives

Hypotheses (opt)

Protocols (detailed flowchart)

Results (data, observations, ...)

Discussion, interpretation, conclusion, next step

Complete tables of content

Signature

# Guidelines: formatting a lab notebook **transcription, data from others**

Date (when you write it)

Title

Protocol (precise enough)

Name of the experimenter

Date experimentation

Info like for example records

Complete tables of content

Signature

# Guidelines: formatting a lab notebook **other type of entry**

Date

Participant (if discussion)

References (if applicable)

Ideas/thought developed

Complete table of content

Signature

## Do

- Cross out mistakes lightly
- Record all info as accurately as possible
- Stable attachment
- Use past tense
- When correcting mistake, indicate date correction

## Don't

Leave empty spaces to complete later

(Leave a blank space (cross the space))

Finish up your notes after leaving the lab

Add loose pages

Remove pages