Title of the Lab Report

Course Name

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Supervisor: Supervisor Name

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Contents

List of Figures

List of Tables

Abstract

A short abstract (150–250 words) summarizing objectives, methods, main results, and conclusions.

1 Introduction

State the purpose of the experiment, background theory, and objectives. Include relevant equations and references.

Example: for a simple harmonic oscillator,

$$m\ddot{x} + c\dot{x} + kx = 0,$$

where m is mass, c damping coefficient and k stiffness.

2 Materials and Methods

Describe apparatus, materials, measurement devices, and procedures. Provide enough detail for reproducibility.

2.1 Setup

Include a labeled diagram or photo:

Figure 1: Schematic of the experimental setup. (Replace with actual image.)

2.2 Data acquisition and analysis

Explain sampling rates, filtering, calibration, and software used. Show any data-processing equations.

3 Results

Present measured data with figures and tables. Use clear captions and reference them in text.

Table 1: Example measurements.

Quantity	Value	Uncertainty
Length (mm)	123.45	0.005
Time (s)	12.345	0.010

Figure 2: Representative result plot. Replace with actual data plot.

4 Discussion

Interpret the results, compare with theory or literature, discuss uncertainties and possible sources of error. Use propagation of uncertainty where needed:

$$\sigma_f = \sqrt{\left(\frac{\partial f}{\partial x}\sigma_x\right)^2 + \left(\frac{\partial f}{\partial y}\sigma_y\right)^2}.$$

5 Conclusion

Summarize main findings and suggest improvements or future work.

Acknowledgments

(Optional) Acknowledge assistance or funding.

A Raw Data

Include raw data, calibration curves, or extended derivations.

B Example calculations

Show a worked example calculation used in the analysis.