CSE200: Online-1 on LaTeX (C2)

Instructions

- Reproduce the following article using LaTeX exactly as it is.
- You do not need to reproduce this instruction page.
- Ensure that all text formatting, lists, tables, equations, figures,references are implemented as presented in the article with the appropriate LaTeX commands.

Mark Distribution

Component	**Marks**
Text Formatting	15
Lists	15
Equations	25
Tables	25
Figures	20
Total	**100**

CSE200: Online-1 on LaTeX

Your Name (Student ID)

January 3, 2026

1 Introduction

Document preparation systems are essential for producing structured and professional technical documents. **LATEX** allows authors to focus on content while maintaining consistent formatting. This article demonstrates formatted text, lists, equations, tables, and figures using commands taught in class.

1.1 Text Emphasis and Fonts

This sentence contains **bold text**, *italic text*, *emphasized text*, and underlined text. Font sizes can also vary such as Large text, small text, and huge text.

2 List Structures

2.1 Mixed and Nested Lists

- Primary Feature
- Secondary Features
  1. Formatting control
  2. Mathematical typesetting
     - Inline math
     - Display math

Note Lists can be customized.

3 Mathematical Modeling

Mathematical expressions are often used to represent data relationships. Consider variables x_i, y, and z^2.

4 Mathematical Modeling

Mathematical expressions are commonly used to describe relationships among variables. Let the variables be x_i, y_j, and σ^2.

4.1 Displayed Equations

$$y_j = \alpha x_j^2 + \beta x_j + \gamma \tag{1}$$

$$\begin{aligned} T &= \sum_{i=1}^{n} (x_i - \mu)^2 \\ &= \sum_{i=1}^{n} x_i^2 - 2\mu \sum_{i=1}^{n} x_i + n\mu^2 \end{aligned} \tag{2}$$

$$f(x_i) = \begin{cases} \dfrac{x_i^2}{\sigma^2} & \text{if } x_i \geq 0 \\ \dfrac{|x_i|}{\sigma} & \text{if } x_i < 0 \end{cases}$$

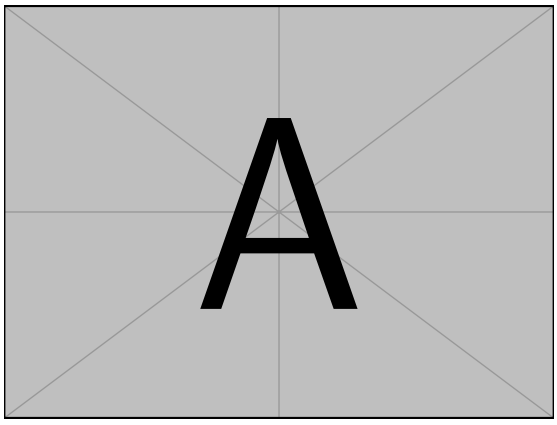
5 Tabular Data Presentation

Module	**Score**	
	Theory	Lab
Module A	75	80
Module B	88 85	90 87
Module C	70	72

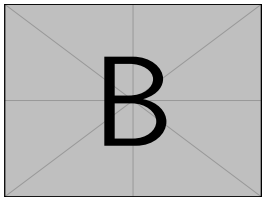
Table 1: Module-wise Performance Summary

6 Visual Comparison

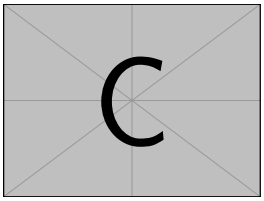
6.1 Asymmetric Subfigure Layout



(a) Main Diagram



(b) Detail B



(c) Detail C

Figure 1: Asymmetric layout with one dominant figure

Figure 1 illustrates how visual elements can be arranged systematically within a document.

Conclusion

This article highlighted the importance of **structured writing** using LaTeX. The use of *formatted text*, mathematical expressions, tables, and figures improves both readability and presentation quality.