ICT

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1 Introduction

This is my **first time** learning *LaTeX*.

This document is part of my ICT LaTeX Class. LaTeX is a professional typesetting system used for creating documents with a clean and structured appearance. It is widely used in academia and technical fields for producing reports, research papers, and presentations.

Features of Using LaTeX:

1. High-quality typesetting.
2. Easy writing of complex mathematical formulas.
3. Automatic document structuring.
4. Efficient cross-referencing and citation management.

2 Image Examples

Figure 1 shows the official logo of *LaTeX*, included here without referencing a folder path.

The image above demonstrates how to insert a graphic by referencing a specific folder in the directory.

- We can include images.

Figure 1: LaTeX Logo

Figure 2: Image Inserted Using Folder Path

- We can edit their labels as needed.
- We can add captions to describe each image.

3 Writing Equations

You can also write equations in LaTeX using the `equation` environment:

$$E = mc^2 \tag{1}$$

3.1 Subscripts and Superscripts

You can write subscripts and superscripts in LaTeX by enclosing expressions between double dollar signs and using the underscore or caret symbols respectively:

$$H_2O$$

$$x^2 + 3x + 12$$

3.2 Writing Fractions

You can also write fractions in LaTeX using the `\frac` command:

$$\frac{\cos(\alpha)}{3x}$$

3.3 Writing Integrals

Integrals can be written easily in LaTeX using the `\int` command.
For example, a simple integral can be written as:

$$\int x^2 \, dx$$

To specify limits of integration, use the underscore (_) for the lower limit and caret ($^{}$) $for the upper limit : \int_0^5 x^2 \, dx You can also write multiple-variable integrals such as : {}_A x^2 y \, dx \, dy \quad and \quad {}_V x^2 y^2 z \, dx \, dy \, dz$

4 Creating Tables

LaTeX also allows you to create clean and well-structured tables.

Table 1: Example of a Simple Table in LaTeX

Student Name	**Roll No.**	**Marks**
M. Siddique	25K-0610	80
A. Ahmed	25K-0520	85
S. Khan	25K-0745	88

You can also create more polished tables using the `booktabs` package, which improves line styling:

5 Conclusion

Through this exercise, I learned the fundamental concepts of using **LaTeX** for creating structured, professional documents. I explored text formatting,

Table 2: Example of a Professional Table Using booktabs

Feature	**Description**	**Example**
Typesetting	High-quality text formatting	Reports, Research Papers
Math Support	Write equations easily	$E = mc^2$
Images	Insert and label graphics	Figures and Logos

inserting images, writing equations, and creating tables. LaTeX provides an efficient and reliable way to produce academic and technical documents, especially when working with mathematical content or research papers. This hands-on experience in the ICT class has given me a strong foundation for creating well-formatted documents in the future.

Abstract

This document provides a brief overview of basic LaTeX features including formatting, image insertion, equation writing, integrals, and table creation, as learned in the ICT class.