Mustansiriyah University
College of Engineering
Highway and Transportation Engineering Department

Engineering Surveying Laboratory

Second Year - First Semester

Experiment 1

Distance Measurement



Prepared by:

Asst. Lect. Hussein Mohammed Noor

Asst. Prof. Teba Tariq

Asst. Prof: Areej Muhy

2027-2026

Asst. Lect. Hussein Mohammed Noor / Asst. Prof. Teba Tariq /Asst.Prof: Areej Muhy

General Objective

To develop students' skills in measuring distances using a tape and an electronic distance measurement (EDM) device.

Learning Objectives

By the end of this experiment, students will be able to:

1. Identify the equipment used for distance measurement.
2. Measure the distance between two points using a tape.
3. Operate an EDM device to measure the same distance.
4. Record and compare the results obtained by both methods.

Introduction

Distance measurement is a basic surveying operation used in planning and setting out engineering projects. In this experiment, the distance between two points is measured using a tape and an EDM device. The results are recorded and compared to understand both methods and the importance of correct measurement procedures.

Mustansiriyah University
College of Engineering
Highway and Transportation Engineering Department
Asst. Lect. Hussein Mohammed Noor / Asst. Prof. Teba Tariq /Asst.Prof: Areej Muhy

Experiment 1: Distance Measurement

Purpose: Distance Measurement by Tape and Electronic Distance Measurement (EDM)

Equipment:

1. Tape (شريط القياس)



2. Ranging pole or rod (الشاخص)

3. Pegs (اوتاد)



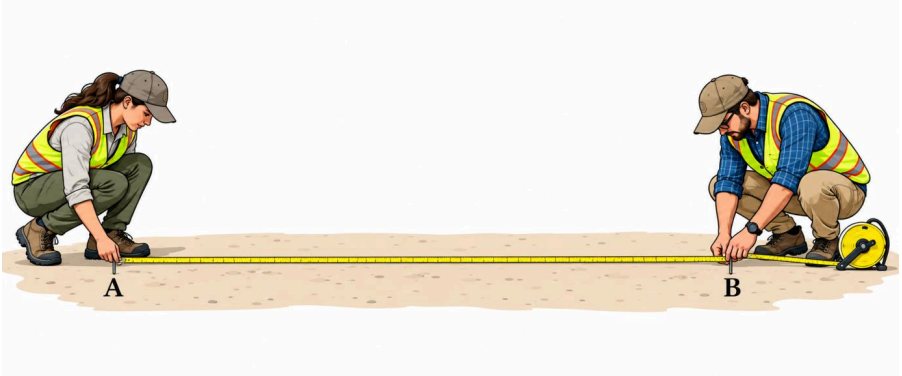
4. Electronic Distance Measurement (EDM)(جهاز قياس المسافة الكترونياً)



Procedure:

Method 1: by Tape

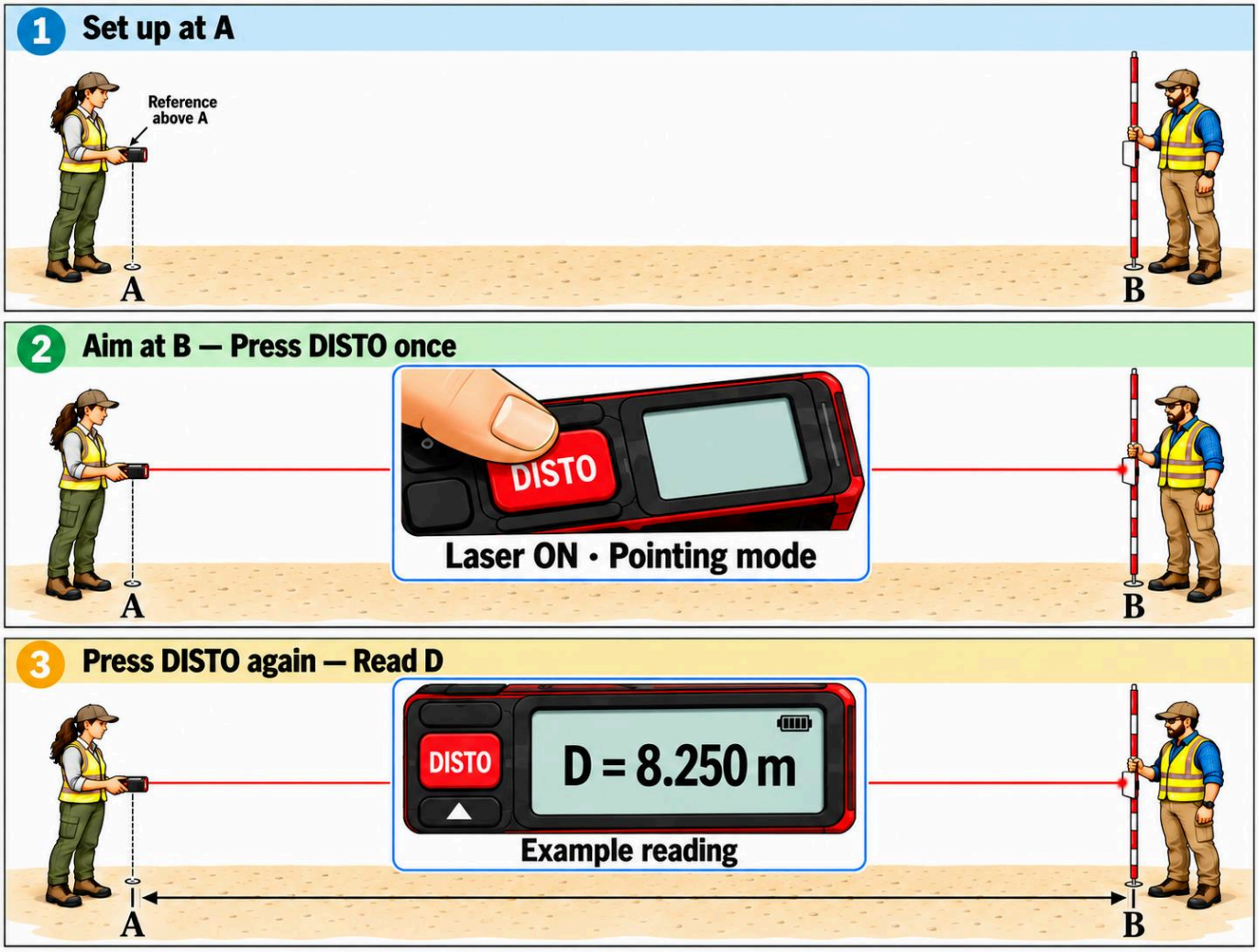
Measure distance between point A and B by Tape and record the distance.



Asst. Lect. Hussein Mohammed Noor / Asst. Prof. Teba Tariq /Asst.Prof: Areej Muhy

Method 2: by Electronic Distance Measurement (EDM)

1. Set up instrument at A.
2. Aim the instrument at point B and Press Disto, the laser is switched on, the instrument is in (pointing mode).
3. A second press Disto, start distance measurement.



For more information, watch this YouTube video.

https://www.youtube.com/watch?v=LU4zYTCnHFQ

Mustansiriyah University
College of Engineering
Highway and Transportation Engineering Department
Asst. Lect. Hussein Mohammed Noor / Asst. Prof. Teba Tariq /Asst.Prof: Areej Muhy

Data Sheet

Experiment 1: Distance Measurement

Student Name: _____ Date: / /

Measurement Method	Distance (m)
Tape	
EDM	

Group Names

No.	Student Name
1	
2	
3	
4	
5	
6	
7	
8	

Supervisor signature

_____