# Virtual Lab Experiment Manual

Objective: **To find out location (Planimetric Coordinates and Elevations) of various points using GPS.**

## Equipment details:
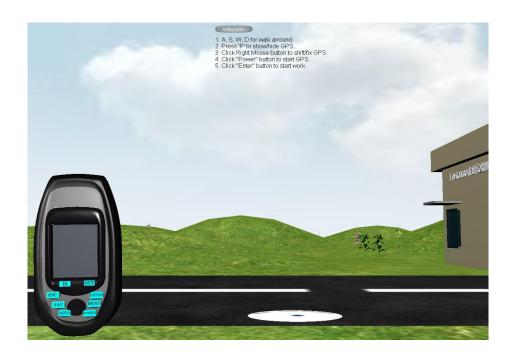
1. Handheld GPS



Procedure: How to carry out this experiment in 3D environment on a computer system.

**Steps to be followed:**

**Step 1:** Click on "Working of Instrument" to start the experiment in a virtual 3D environment. We get a whole 3D and realistic environment (see the picture below), which is user friendly, as soon as the experiment starts.



**Step2:** Click Right Mouse Button to shift/fix GPS. Press P to show/hide GPS.

**Step3:** For movement in a 3D environment use following keys:-
W→ Forward, S→backward, A→left, D→right.

**Step 4:** Click on POWER button on device to turn on GPS.



Press ENTER button to proceed.

After pressing Enter, it automatically receives signals from the satellites. Signals from minimum four satellites are required to get accurate results. Press OK to Proceed.

**Step 5:** Hold the GPS at a point whose coordinates are to be determined with the help of A, S, D, W.

**Step 6:** Click on IN button for observations. It will show the Latitude (° ' "), Longitude (° ' ") and Elevation (m) on the GPS screen. It also shows an object ID box.



**Step 7:** Enter object ID for the point in the object ID box and click GOTO button to store the readings in the database. See the below Picture.

**Step 8:** You can walk through the field on different locations using keys A, S, D, F on computer keyboard; Latitude, Longitude and Elevation values will change.

**Step 9:** Store the readings as given in step 7.

**Step 10:** Click on ESC button to exit the screen. A message will display that "Readings successfully saved in database".

**Step 11:** Click on NAV button to navigate through stored readings.



**Step 12:** Press P to turn off GPS.