ANALYTIC Geometry

# Learning objectives

We want to introduce analytic geometry, also known in mathematics, as coordinate geometryor Cartesian geometry. Analytic geometry is the study of geometry using a coordinate system.

Usually the Cartesian coordinate system is applied to manipulate equations for planes, straight lines, and circles, often in two and sometimes three dimensions. Geometrically, one studies the Euclidean plane (two dimensions) and Euclidean space.

Geometry offers the resources engineers need to realize their ideas, from measuring lengths and areas to examining geometric patterns. Ensuring the functionality and stability of engineering projects requires a strong grasp of geometry, regardless of whether one is drafting blueprints or building computer models.

## Analytic Geometry. Summary

Space ℝ𝑛

Norms and distances.

Cartesian coordinates.

Euclidean distance.

𝐿1 distance.

Equation of a straight line.

Slope.

Intersection between two straight lines.

## Video Practical

<https://zonavideo.upc.edu/video/67cad78d19d5fc1e652b3ae2>