

LESSON 1.1: INTRODUCTION TO GEOMATICS AND LAND SURVEYING

Introduction

I have been in the Geomatics, Geospatial, and Land Surveying profession for nearly 25 years and keeping track and staying current with the new technologies has been a constant challenge for myself and many of my professional colleagues. Geographical Information Systems (GIS), 3D Laser scanning, and Aerial Drones have pushed the envelope even further for this exciting and ever evolving field. I think George Washington would be amazed :)

In this lesson you will be introduced to the exciting and ever evolving field of Geospatial Science and Land Surveying. After working through the lessons you will be required to research and write a two page college level report on the many opportunities available to you as a Geospatial Tech.

- Watch video lessons below.
- Take the Review Quiz 1.1 after watching the videos.

The following video lessons describe the varying degrees of opportunities and work in the Geospatial Sciences, Land Surveying, and Cartographic professions...enjoy.

- [VIDEO 1: SURVEYING: A LIFE WITHOUT LIMITS](#)
- [VIDEO 2: CAREER IN LAND SURVEY](#)
- [VIDEO 3: WHAT IS GEOMATICS ENGINEERING?](#)

Now take Review Quiz 1.1 . This quiz has 12 review questions that are based on the videos that you just watched. When you are done, go to LESSON 1.2.

LESSON 1.2: INTRO TO BASIC COORDINATE GEOMETRY AND TRIGONOMETRY

Introduction

One of the cool things about the Geomatics, Geospatial, and Land Surveying profession is that it's grounded in basic Coordinate Geometry and Trigonometry math. These basic math principles were in use for the building of the Great Pyramids and are used today to determine our location on the surface of the earth to millimeter accuracy using measuring devices such as GPS, 3D Laser scanning, and Aerial Drones.

In this lesson you will be introduced to Basic Coordinate Geometry and Trigonometry and how they relate to our field measurements and office mapping. After working through the lessons you will be required to work through and math worksheet which contains real life field examples on how and when you apply these fundamental math formulas.

- Watch the video lessons below.
- Take Review Quiz 1.2.

- Return to Week 1 main page and complete Assignment 1 and Lab 1. Follow instructions.

The Lesson

The following video lessons give instruction and examples on basic Trigonometry and Coordinate Geometry formulas and some practical applications.

Videos

- [SINE, COSINE, TANGENT TRIGONOMETRY: RIGHT TRIANGLE MATH EXPLAINED](#)
- [ANGLE OF ELEVATION: TRIGONOMETRIC RATIO PROBLEMS](#)
- [SPECIAL RIGHT TRIANGLES](#)

Basic Coordinate Geometry

- [PYTHAGOREAN THEOREM](#)
- [COORDINATE GEOMETRY: THE COORDINATE PLANE](#)

Distance Formula

- [EXECUTE THE DISTANCE BETWEEN TWO COORDINATES ON A NUMBER PLANE](#)
- [BEARINGS](#)
- [BEARINGS CHALLENGES](#)

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