

Course Objectives/Course Outline
Spokane Community College

Course Title: Natural Resources Trigonometric Applications

Prefix and Course Number: NATRS 122

Course Learning Outcomes:

By the end of this course, a student should be able to:

- have basic knowledge of statistics, geometry and trigonometry as it applies to Natural Resource Management and Water Resources.
- be able to use Excel to solve basic Natural and Water Resources problems, to analyze and graph field data.

Course Outline:

- I. Data Analysis and Graphing
 - A. Graphing data
 - 1. Parts of a graph
 - 2. Bar graphs
 - 3. Line graphs
 - 4. Other graph types
 - B. Interpreting data through graphing (Chapter 10, Sections 1-3)
 - 1. Graphing coordinates and equations
 - 2. Types of graphs created from equations.
 - 3. Creating a regression curve
 - 4. Using a graph to find new values
 - C. Basic Descriptive Statistics
 - 1. Measures of central tendency
 - 2. Measures of variation
 - 3. Measures of Precision
 - D. Using Excel
 - E. Tables
 - 1. Elements of a table
 - 2. Finding values in a table
 - 3. Interpolating across columns
 - 4. Interpolating across rows
- II Geometry
 - A. Perimeter
 - B. Area
 - C. Volume
- III Trigonometry
 - A. Angles
 - 1. Types: Acute, Obtuse, Right, Interior, Exterior, Deflection, Right, Left.
 - 2. Using a protractor
 - 3. Degrees, minutes, seconds Arithmetic
 - 4. Converting to and from decimal degrees
 - B. Types of triangles
 - 1. Equilateral
 - 2. Isosceles
 - 3. Right
 - 4. Oblique
 - 5. Sum of interior angles

C. Right Triangles

1. Pythagorean Theorem
2. Sin, Cos, Tangents
3. Arc functions
4. Area
5. Applications to surveying and other natural resource and water resource work.

D. Oblique Triangles

1. Law of Sines
2. Law of Cosines
3. Area
4. Applications

E. Polygons

1. Sum of interior angles
2. Solving for missing parts
3. Applications