

**Course Objectives/Course Outline**  
**Spokane Community College**

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**Course Title:** Maps and Aerial Photo Interpretation

**Prefix and Course Number:** NATRS 204

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**Course Learning Outcomes:**

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

- Determine scales of maps and aerial photos.
- Match landforms in the field with those shown on maps and aerial photos.
- Determine elevation and landforms from a contour map.
- Navigate across the landscape using maps, aerials photos, pace and a hand compass.
- Draw a profile and determine slope grades from a contour map.
- Lay out roads/trails at a given slope on a contour map.
- Describe property using the legal description system
- Describe and plot position using latitude/longitude and UTM systems
- Select the correct aerial photo and map via the most commonly used indices.
- Describe aerial photos in terms of film, rectification, focal lengths, etc.
- Determine flying altitude and scale of aerial photos.
- Correctly align aerial photos for stereo viewing.
- Correctly determine the principal points and effective area of an aerial photo.
- Determine distance, area and heights using map/photo scales, rulers, grids, parallax grid and polar planimeter.
- Describe various techniques used for remote sensing and photo interpretation.
- Describe basic concepts of LIDAR and its uses.
- Map features and boundaries using an aerial photo, map and hand compass.

**Course Outline:**

- I. Maps (Chapter 14)
  - A. Types
    1. Planimetric versus contour
    2. Projections and Datums
    3. Indexes, ordering maps
  - B. Scale
    1. Determining ground distance
    2. Determining map distance
  - C. Navigation
    1. Pacing
    2. Hand compass use
- II. Elevation
  - A. Using an altimeter
  - B. Using contours
  - C. Drawing contours

- D. Drawing profiles
- E. Determining grade
- F. Road and trail layout
- III. Parcels and Positions
  - A. Legal description system
  - B. Latitude/Longitude
  - C. UTM
  - D. Other: State Plane Coordinates; Foreign Countries
- IV. Aerial Photos
  - A. Introduction
    - 1. Types: film, angle, aircraft, orthophotos
    - 2. Photo geometry
    - 3. Using flight indices
  - B. Scale (two ways)
  - C. Determining and drawing PP, CPP and effective area of a photo.
  - D. Steroscopic viewing
  - E. Determining area (includes maps): dot and box grids; polar planimeter
  - F. Remote sensing and Interpretation
  - G. LIDAR
  - H. Interpretive measurements (heights, dbh, % canopy, stems/acre, etc.)
  - I. Mapping