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# Common Course Numbering System

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## Searching Current Courses For Spring 2017

**Course:** GIS 261
**Title:** GIS Survey II
**Long Title:** GIS Survey II
**Course Description:** Examines applied surveying operations and mapping incorporating survey measurements, statistical measures, error assessment and applied survey process.
**Min Credit:** 3
**Max Credit:**

**Course Notes:** NCE 3.2.15 JLG
**Origin Notes:** FRCC

**STANDARD COMPETENCIES**

1. Use the principles and procedures of plane surveying for data collection, mapping, and construction layout;

2. Analyze and reduce survey field measurements to produce a topographic map;

3. Assess the accuracy and precision of field measurements;

4. Evaluate the sources of systematic and random errors in those measurements;

5. Determine the suitability for calculating derived quantities;

6. Create professional documents with proper grammar and syntax as a member of a team;

7. Demonstrate the procedures of surveying field data collection (including the use of many types of equipment);

8. Apply surveying computations and adjustments and surveying data representation;

9. Implement field and stadia traverse;

10. Complete area computations;

11. Describe and demonstrate the operation and use of field survey instrumentation;

12. Perform Global Navigation Satellite Systems (GNSS) survey.

**TOPICAL OUTLINE**

I. Traverse

a. Computations

b. Coordinate Transformations

c. Accuracy and Specifications

d. Measurement Omission

II. Area Calculations

a. Methods

b. Offsets

III. Map Projections

a. Types of Projections

b. Datum

c. Computation of Coordinates

d. Conversion of Coordinates

IV. Global Navigation Satellite Systems

a. Definitions

b. System Components

c. Positioning Methods

d. Errors

V. Spatial Information Systems

a. Coordinate References

b. Contours

c. Digital Elevation Models

d. Cartography

e. Topography

f. Map Contents

VI. Control Survey

a. Planning

b. Horizontal Control

c. Vertical Control

d. Precision

VII. Route Surveying

a. Planning

b. Control

c. Curve Geometries

d. Cross Sections

e. Volumes

VIII. Construction Surveying

a. Alignment

b. Grade

c. Precision

d. Highways

e. Streets

f. Pipelines

g. Buildings

h. Bridges

i. As Built Surveys

IX. Land Survey – History

a. Kinds of Land Surveys

b. Monuments

c. Property Records

X. Land Survey – Methods

a. Property Description

b. Metes and Bounds Description

c. PLSS

d. Subdivision

XI. Land Survey – Legal

a. Legal Authority of the Surveyor

b. Liability of the Surveyor

XII. Types of Survey

a. Field Records

b. Original Survey

c. Resurvey

d. Subdivision

e. City

f. Cadastral

g. Public Lands

**Course Offered At:**

**Front Range Community College FRCC**

**RELEASE: 8.5.3**

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