SVR 160 - SURVEYING CALCULATIONS

Course Description

Students will investigate and apply a number of mathematical principles common to plane surveying applications focusing on Cartesian geometry and coordinate systems using hand calculations, CAD programs, and programable spreadsheets. Areas of study include direct and inverse problems, intersection problems, volume computations, area partitions, coordinate transformations, resections and an introduction to least squares adjustment. Group 2 course

Credit Hours

3

Contact Hours

4

Lecture Hours

2

Lab Hours

2

Required Prerequisites

MTH 121 or higher, SVR 110, SVR 120

General Education Outcomes supported by this course

Quantitative Reasoning

Course Learning Outcomes

Knowledge:

- Identify Cartesian geometry, coordinate systems, horizontal and vertical curves, area partitions, re-sections and volume computations.

Application:

- Apply a number of mathematical algorithms common to plane surveying applications.
- Produce sound decisions, judgements, and/or predictions using numbers, symbols, measurements, properties, and the relationships of quantities.

Integration:

- Collect hand calculations, CAD and programable spreadsheets.

Human Dimension:

- Coordinate with teammates to complete course projects.

Caring - Civic Learning:

- Identify the impact of a surveyor's decision-making process on local, national and global issues.

Learning How to Learn:

- Identify how surveying calculations build a foundation of knowledge for program outcomes.