PARKLAND COLLEGE

Course Information Form (CIF)

Course Code: SRV 113

Course Title: Basic Surveying

Department: Applied Sciences and Technologies
PCS Code: 1.2 - Occupational/Technical Instruction
CIP Code: 15.1102
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 2-3-3; 3-3-4
Credit Hour Distribution:

Lecture: 3	Lab: 3	Clinical: 0	**Total: 4**

General Course Information

Catalog Description

Fundamental surveying applications: construction layout, topographic mapping, leveling, distance measurement, angular measurement, computations, and instrument skills.

General Course Objectives

Students will demonstrate understanding of basic surveying concepts, methods, and applications.
Students will perform basic field practices and computational processes.

Minimum Placement Levels

English	Reading	Math
None	None	Placement out of MAT 060

Prerequisites

None

Methods of Evaluation

Students will be given a minimum of 1 objective exam, 7 homework assignments, and 8 lab exercises.

Instructional Materials and Additional Supplies

Surveying with Construction Applications
Author: Kavanagh & Slattery
Edition: 8th edition
ISBN: 978-0132766982

- Scientific calculator (Casio fx-115MS or equivalent)
- Spiral-bound field book
- Pencil
- 1 ½ inch vinyl ring binder with clear sleeve on spine and cover
- Straightedge
- Engineer's scale
- Optional: Circular protractor

Course Content

General Learning Outcomes (GLOs)

- Critical Thinking and Information Literacy: Students will demonstrate the ability to evaluate perspectives, evidence, and implications, and to locate, assess, and use information effectively.
- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

Course Segments and Student Learning Outcomes

3 credit hour option

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Plan Reading and Interpretation	1. Extract survey information from construction drawings. 2. Explain the relationships between field data and finished site plans.	4	0	0
Leveling	1. Measure elevation differences using optical instruments. 2. Record measurements, compute elevations, and identify errors using common industry practices.	4	6	0
Distance Measurement	1. Use proper techniques and equipment to make linear measurements. 2. Apply appropriate corrections for systematic errors.	2	3	0
Topographic Mapping	1. Collect topographic site information using multiple methods such as station/offset and angle/distance. 2. Plot collected data and computed results to produce topographic maps.	6	12	0
Angular Measurement	1. Use proper techniques and equipment to perform angular measurements within common accuracy standards. 2. Perform basic angular and trigonometric calculations associated with traverse surveys.	6	12	0
Construction Layout	1. Use proper techniques and equipment to lay out alignment and elevation reference marks for basic construction projects.	6	12	0
Error Management	1. Describe the relationship between precision and accuracy. 2. Explain common error sources and mitigation methods.	2	0	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
30	45	0

4 credit hour option

Meet requirements from previous credit hour group plus:

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Mathematics Review	1. Solve application problems specific to land surveying involving percentages. 2. Convert between various measurement units such as metric and standard systems. Convert measurements between fraction and decimal formats. 3. Set up and solve equations from land surveying application problems. 4. Plot and decipher coordinate pairs and their relationships. Apply reasoning and problem-solving applications to coordinate algebra. 5. Earn at least 70 percent on an exam that includes topics such as percentage, unit conversion, coordinate algebra, and their applications to land surveying.	15	0	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
45	45	0