CET 277 Survey Calculations and Statistics

Course Description: A course on survey calculations employing statistical concepts. Topics include: descriptive and inferential statistics, advanced coordinate geometry methods, least squares adjustment, and error theory.

Prerequisites(s): Admitted to Advanced Surveying Certificate program or Program Chair consent

Corequisite(s): None

Lecture Hours: 4	Lab Hours: 0	Credit Hours: 4
Lab Fee: 0	Supplemental Fee: 0	Purpose:
☐ Transfer Assurance Guide Course (TAG)	☐ Transfer Module Course (TM)	
Course Format: Lec	Grading: A/B/C/D/F/I	
Delivery Method: ☒ Web	□ Hybrid	□ Classroom
Semesters Offered: □ Fall	☒ Spring	□ Summer

Course Primary Text:

Title: *Essential Statistics*	Edition:
Author(s): J. H. Wilson	
Publisher: Pearson Prentice Hall Publishing	
Title: *Adjustment Computations, Spatial Data Analysis*	Edition: 5th
Author(s): Ghilani, Charles D.	
Publisher: John Wiley & Sons, Inc.	

Recommended Text:

Title: *Elementary Surveying, An Introduction to Geomatics*	Edition: 13th
Author(s): Wolf, Paul R. and Ghilani, Charles D.	
Publisher: Pearson Prentice Hall Publishing	

Course Outcomes:

1	ABET A - an ability to apply knowledge, techniques, skills and modern tools of the discipline to narrowly defined engineering technology activities.
2	ABET B - an ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge.
3	ABET C - an ability to conduct standard tests and measurements, and to conduct, analyze and interpret experiments.
4	ABET E - an ability to identify, analyze, and solve narrowly defined engineering technology problems.
5	ABET F - an ability to apply written, oral, and graphical communication in both technical and non-

	technical environments; an ability to identify and use appropriate technical literature.

Course Topics:

Week 1	Introduction, Descriptive Statistics
Week 2	Normal Distribution Characteristics
Week 3	Continue Module 2, Probability and Errors
Week 4	Finish Module 3
Week 5	Hypothesis Testing, t-tests
Week 6	Confidence Intervals
Week 7	Correlation and Regression
Week 8	Coordinate Geometry Review
Week 9	Advanced Coordinate Geometry
Week 10	Overview of Photogrammetry, Photogrammetry Problems
Week 11	Midterm Exam
Week 12	Least Squares Adjustment - Introduction
Week 13	Least Squares Adjustment
Week 14	Least Squares Adjustment
Week 15	Final Exam

Methods of Evaluation/Assessment

Statistics Tests – 2 @ 19 pts each
Statistics Quizzes – 3 @ 4 pts each
Survey Calculations Tests – 2 @ 11 pts each
Survey Calculations 5 Homework assignments @ 5 pts each
Class participation – 3 pts

Course Keeper: Carol L. Morman, PE, PS

Date Completed: September 12, 2013
Updated: September 16, 2016
Updated: March 15, 2019