EVT 180 Environmental Statistics

Course Description: A hands-on, computer lab and calculator intensive course on fundamental statistical methods used in environmental pollution monitoring. This course emphasizes environmental statistics as a physical science, not just as a mathematical science. Environmental data sets from water, wastewater, air, solid wastes, and soils will be used. Data analyses will utilize Microsoft Excel , STATDISK and handheld calculator statistical features.

Prerequisites(s): EVS 110 and MAT 125 **Corequisite(s):** No co requisite

Lecture Hours: 1	Lab Hours: 2	Credit Hours: 2
Lab Fee: 70	Supplemental Fee: 0	Purpose:
☐ Transfer Assurance Guide Course (TAG)	☐ Transfer Module Course (TM)	
Course Format: Lec/Lab	Grading: A/B/C/D/F/I	
Delivery Method: □ Web	□ Hybrid	X□ Classroom
Semesters Offered: □ Fall	X□ Spring	□X Summer

Course Primary Text:

Title: Elementary Statistics	Edition: 12
Author(s): Mario F. Triola	
Publisher: Pearson	

Supplemental Materials:

Handouts, PowerPoint, internet

Course Outcomes:

1	a. An ability to apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities;
2	d. The student will be able to function effectively as a member of a technical team;
3	f. An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature.
4	i. The students will demonstrate the knowledge of the importance quality, timeliness, and continuous improvement.

Course Topics:

Week 1	Symbols, data sets, Excel functions, calculator functions for statistics,
Week 2	Histogram, frequency distributions; variation, and relative standing; CVDOT
Week 3	Describing, exploring, and comparing data; measures of center, variation, and relative standing.
Week 4	Normal distributions, standard normal curve, binomial distributions
Week 5	Z-scores, outliers, tests for normality of data set
Week 6	Central Limit Theorem; standard error term
Week 7	Confidence intervals, sample size, critical values, Students t-distribution; Examination #1
Week 8	Proportions, hypothesis testing
Week 9	Hypothesis testing (continued)
Week 10	Two proportions, inferences about two means, inferences from two samples; Examination #2
Week 11	Correlation and regression
Week 12	Statistical process control in water and wastewater laboratories; Examination #3
Week 13	ANOVA (analysis of variance)
Week 14	Non-parametric statistics for small, non-normally distributed samples)
Week 15	Comprehensive final examination #4

Methods of Evaluation/Assessment

□ Formative: x□ Summative

List assessment activities (e.g. quizzes, discussions, essays, research papers, debates, oral presentations, exams):

quizzes
exams
statistics computer lab
homework
group activities

Course Keeper: Carl Gatton Date Completed: 2/28/18
Reviewed by Ann Gunkel 4/20/19