Statistics and Probability

Department: Computer Engineering	
Program Name: Statistics	**Program Code:** ENGC227
Course Number: Second Class — **Credits:** 3 hr. (2 units)	**Year/Semester:** 2020- 2021

☒ Required Course ☐ Elective Course (click on and check the appropriate box)

Prerequisite(s):
NA

Course Description: The course teaches the principles of the statisces and probability which are the foundation of many disciplines.

Course Web Page, or Google Class Room Code:

Textbook(s):
1- Introduction to Probability and Statistics for Engineers, Holický, Milan
2- Introduction to Statistics, K. M. AL_Rawi, Second Edition, 2000

Topics Covered and Class Schedule:

Week 1	Role of statistics in science, types of statistics (Descriptive and Inferential), data presentation (Arithmetic mean, Median, Mode).
Week 2	Descriptive statistics, histogram frequency distribution, data limits, data tabulations, polygon, ogive.
Week 3	Basic Concepts of Probability Theory (random events and sample space), relationship between statistics and probability. Sets and probabilistic models, axioms of probability, rule of Probability
Week 4	The definition of conditional probability and their properties, Multiplication rule, total probability theorem, Bayes' theorem
Week 5	Three events, mutually and non-mutually events
Week 6	Counting, permutation, combination
Week 7	The definition and classification of random variable (Discrete and Continuous), type of discrete distribution.
Week 8	Discrete probability distributions, Binomial and Poisson Distribution.
Week 9	Continuous distribution , normal distribution
Week 10	Test of hypothesis, types of errors in hypothesis testing, hypothesis tests of means.
Week 11	Test of the mean with unknown population variance, hypothesis test of two means with known population variance.
Week 12	The principles design of experiments, one way and two-way ANOVA (ANOVA: the Analysis of Variance).
Week 13	Line and curve Fitting, regression
Week 14	Applied statistics Clustering and dimension reduction
Week 15:	Final Exam.