1. CEE 3720 – Engineering Statistics

2. Course credit hours: 2
   Contact hours per week: 2
   Credit category: Engineering Topics

3. Course coordinator: Jessica Oswalt

4. Textbook: *Engineering Statistics*, by Douglas C. Montgomery, George C. Runger, and Norma F. Hubele, 2011.

   Supplemental materials: WileyPLUS online course access

5. Course information:

2020 Catalog description	Engineering applications of probability and inferential statistics including probability distributions, hypothesis testing, confidence intervals, and regression.
Prerequisite(s)	MATH 1920 and junior standing
Course type	Selected Elective – Students may choose MATH 3470 or CEE 3720

6. Course instructional outcomes:

Course Outcome No.	Course Outcome (CO)	ABET Student Outcome
CO1	Analyze data and develop basic statistical models including regression models	6
CO2	Understand and compute descriptive statistics of sample data such as the mean, median, variance, and correlation coefficient	6
CO3	Calculate event probabilities and use discrete and continuous probability distributions to determine probabilities	6
CO4	Apply and interpret the results of confidence intervals and hypothesis tests to make decisions	6

ABET criterion 3 Student Outcomes addressed by this course:

SO No.	Student Outcome (SO)
3.6	An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

7. Course topics:
    1. Descriptive statistics
    2. Probability concepts and probability distributions including binomial, Poisson, exponential, normal, and log-normal
    3. Inferential statistics for a single population parameter (mean, variance, proportion)
    4. Inferential statistics for two population parameters (means, variances, proportions)
    5. Regression analysis

    Program criteria (curriculum) addressed by this course:
    1. Apply probability and statistics to address uncertainty

8. Additional topics, assignments, or requirements for dual-level (4000/5000) course: N/A

6. Date: 07/14/2020