FEM 1063/FDM2063: STATISTICS AND APPLICATION/PROBABILITY AND STATISTICS
September 2020 Semester

CREDIT HOURS: 3 units

Lecture: 4 hours/wk

COURSE MANAGEMENT

Semester	September 2020
Pre-requisite	Engineering Math II
Schedule Lectures	 As per time table
Lecturer: Name e-mail Room Telephone	 Dr. Samsul Ariffin Abdul Karim (Coordinator) samsul_ariffin@utp.edu.my 20.03.29 05-3687692
Consultation Hours	As per scheduled by lecturer

SYNOPSIS:

This course is an introduction to Probability and Statistics for engineering with three major areas:

Part I: Descriptive Statistics
Part II: Inferential Statistics
Part III: Linear Regression and Design of Experiment

OBJECTIVES:

Upon the completion of the course, students are expected to be able to:

1. Analyze data from engineering and science.
2. Organize, summarize and present data by using graphical techniques (Part I).
3. Draw conclusions about characteristics of population based on sample data by using suitable techniques (Part II).
4. Conduct engineering experiment involving two factors, analyze and interpret effects (Part III)

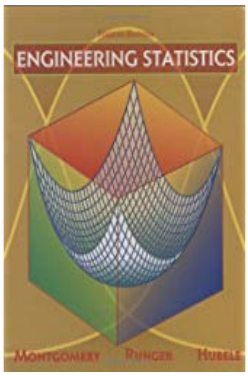
GRADING

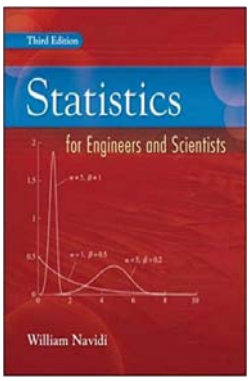
Coursework: **Tests (2)** **Quizzes (2)** **Assignment**	**60%** **20 X 2= 40%** **10%** **10%**
Extended Assignment (EA)	**40%**
Total	**100%**

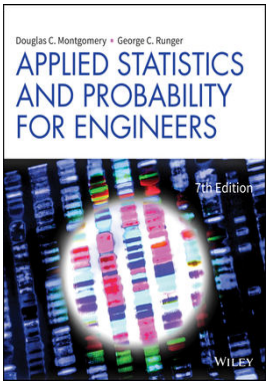
F 0.0	D 1.0	D+ 1.5	C 2.0	C+ 2.5	B 3.0	B+ 3.5	A- 3.75	A 4.0
0-39.9	40-44.9	45-49.9	50-54.9	55-64.9	65-74.9	75-79.9	80-84.9	85-100

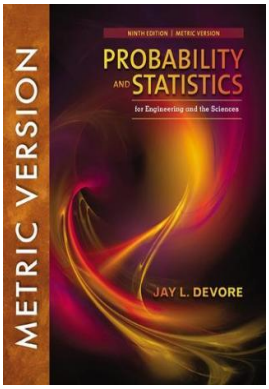
TEXT

D. C. Montgomery, G.C. Runger and N.F. Hubele, *Engineering Statistics* (4th edition). Wiley, 2007.
W. Navidi, *Statistics for Engineers and Scientist* (3th. Edition). Mc. Graw Hill, 2011.









REFERENCE BOOKS

1. D.C. Montgomery and G.C. Runger. Applied Statistics and Probability for Engineers (7th. Ed.), John Wiley, 2018.
2. J.L. Devore. Probability and Statistics for Engineering and Science (9th ed) Thomson: Canada 2016.
3. J.S. Milton and J.C. Arnold. Introduction to Probability and Statistics (4th ed) Mc Graw Hill, 2004.
4. R.E. Walpole, S.L. Myers, R.H. Myers and K. Ye. Probability and Statistics for Engineering and Scientists (8th ed) Pearson Education, 2007.

ADDITIONAL INFORMATION

Examination:
Extended Assignment (EA) is scheduled on the 13th -14th week of the semester.

Tests:
Two (2) tests will be given on the tentatively 6th and 11th week. Students will be required to sit and answer all given questions. ***Any attempt to copy or cheat will result in students being barred from completing the course and the case will be reported to examination unit for further action.***

Assignments:
Students will be assigned in group. One assignment (more on Statistical Applications) will be given where the members of each group need to discuss and give a written solution.

Quizzes:
Two (2) quizzes /online quizzes will be given**.**

Attendance:
Attendance to lectures and tutorials are compulsory. With less than 85% attendance and absenteeism without valid reason will be barred from taking the final exam.

E-learning:

All students are required to register and enroll in the course module. Failure to register will result in student being barred from completing the course. Refer to U-learn for update on course materials and announcements.

COURSE OUTLINE SEPTEMBER 2020

Week	Topics	Assessment
W1:	Chapter 1: **Descriptive Statistics - Numerical Summary of Data, Graphical Display of Data**	
W2:	Chapter 2: **Discrete and Continuous Random Variables**	
W3:	Chapter 3: **Discrete Probability Distribution Functions – Binomial and Poisson Distributions**	**Quiz 1 [5%]**
W4:	Chapter 4: **Continuous Probability Distribution Functions – Exponential and Normal Distributions. Random sample and Central Limit Theorem, Normal approximation**	
W5:	Chapter 5: **Joint probability distributions**	
W6:	Chapter 5: **Joint probability distributions (cont.)**	**Test 1 [10%] 22 Oct 2020 (8-10 PM)**
W7:	Chapter 6: **Hypothesis testing for one population**	**Assignment** (Release to student)
W8:	Chapter 7: **Hypothesis testing for two population**	**Quiz 2 [5%] (on-line)**
W9:	Chapter 8 **Simple linear regression model**	
W10:	Chapter 9: **Multiple linear regression model**	**Assignment** (Submission) **[10%]**
W11:	Chapter 10: **Design of Experiments, One-way ANOVA**	**Test 2 [10%] 26 Nov 2020 (8-10 PM)**
W12:	Chapter 11: **Two-way ANOVA Coursework release**	
W13:	**STUDY WEEK**	
W14:	**FINAL EXAMINATION**	