MEEN 2110 Data Analysis Syllabus Summer 2017

Instructor: Xiaohua Li
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Lecture Time: Tuesday & Thursday 10:00 a.m.-11:20 a.m. room NTDP F175
Office Hours: T/TH: 9:00-10:00 plus open office policy

Required Textbook: Applied Statistics and Probability for Engineers
Montgomery, Douglas C and Runger, George C
ISBN-13: 978-1-118-5397-2

Course Description:
The course is designed for the engineering students to use appropriate statistical methods for engineering problem solving in manufacturing, engineering testing, material synthesis, and etc. The students will have a good understanding of the concepts on probability, random variables, intervals, distributions, randomization, replications, and experimental errors. The knowledge learned from the course is to help the students to draw meaningful engineering conclusion from the data. The practical applications of these techniques will be discussed using the actual data and interpretation of the problems.
Pre-requisites: MATH 1710 Calculus I.

Course Learning Outcomes (CLO):
Upon successful completion of this course, students will able to:
1. Students will understand the concepts of probability, random variables, confidence level, distributions, mean, variance, standard deviation, and replication.
2. Students will have the knowledge on different data distributions, including Normal, Binomial, Poisson, Exponential, Gamma, Weibull, and Lognormal, to conduct effective data analysis and to make appropriate conclusions.
3. Student will learn to use z-distribution and t-distribution for data analysis and to find the confidence intervals.
4. Students will learn to use Spreadsheet for the basic data analysis and plotting.
5. Students will learn the procedure to apply the statistical tools in engineering, such as finding the lower or higher percentile from the data distributions used for design value determination of an engineering product

Grades:				
	Homework (8)	10%	≥ 90	A
	Quizzes (highest 3/5)	10%	80-89.9	B
	Exam #1 (Ch2, 3&4)	25%	70-79.9	C
	Exam #2 (Ch4, 6&7)	25%	60-69.9	D
	Final (Exam #3) (Ch 7, 8 &9)	25%	< 60	F
	Attendance (5/6)	5%		
	Total	100%		

Homework Policy:

1. "**Homework Day**": **Thursday**. the day new homework will be assigned (HW will be posted in Blackboard only) and previous homework will be collected;
2. Homework should be turned in on the due day before the lecture starts. **NO late homework will be collected. Exceptions**: medical emergence (student and important ones), transportation/traffic emergency; religious holidays/duty, jury duty and military duty. **Documentary evidences** must be submitted.
3. Definition of "**late**": when class is over and instructor steps outside the classroom, homework turned in thereafter will be considered as "**late**" and will not be collected
4. Solutions to Homework will be posted in Blackboard after 11:30 am Thursday
5. Having no textbook is not a valid excuse for not doing homework. It is the student's responsibility to acquire textbook for his/her study
6. Homework can be turned in earlier than the due day
7. Homework dropped in the instructor's departmental mailbox will NOT be collected
8. Homework slid through the door into the instructor's office will NOT be collected
9. Homework dropped in the "homework dropbox" in front of the department door will NOT be collected
10. Homework turned in other than the due day or outside classroom must be turned in to instructor either IN PERSON or through EMAIL.
11. If homework is turned in through email, it should be scanned (or pictured by a smart phone) and emailed to instructor before the class ends (11:15 a.m.)
12. Homework should be stapled. Instructor or TA will not be responsible for lost loose homework pages.

Exam and Quiz Policy:

(1) **Quizzes are open book and open notes.**
(2) **Exams are closed book and closed notes with formula sheets**
(3) Formula sheets could be maximum 5 pages **on top of** instructor's handouts, A4 or letter size, both sides
(4) **Student is responsible for preparing his/her own formula sheets. Instructor will NOT provide any formula sheets for the exam**
(5) Formula sheets could include anything **BUT**: **solutions of any kind/format** (numerical or symbolic) to homework problem or lecture/textbook examples. Student who failed to follow this rule will score zero in the exam and this cheating matter will be reported to MEE department and University.
(6) Formula sheets must be turned in with the exam papers (in the case of formula sheets were not checked by the instructor during the exam). Student who failed to follow this rule will score zero in the exam and this cheating matter will be reported to MEE department and university
(7) **There will be NO make-up quiz. Exceptions**: medical emergence (student and important ones), transportation/traffic emergency; religious holidays/duty, jury duty and military duty. **Documentary evidences** must be submitted.
(8) **There will be NO make-up exam. Exceptions**: medical emergence (student and important ones), transportation/traffic emergency; religious holidays/duty, jury duty and military duty. **Documentary evidences** must be submitted.
(9) **All make-up quizzes and exams should be completed within one week after the regular quizzes and exams.**

(10) **Exchanging anything without the approval from the proctor, including but not limited to, calculators/scratch papers/formula sheets/writing tools during the exam between/among students is prohibited**
(11) **Using cell phone for whatever purpose during the exam is prohibited.**
(12) **Using Internet through whatever devices during the exam is prohibited.**
(13) **Peeking, talking & discussing (either by oral/written/sign language) between/among students during the exam is prohibited**
(14) **Using any unauthorized/unapproved materials during the exam is prohibited**
(15) **Using any type of earpiece/earbuds/earphone/Bluetooth/Stereo Headset (unless a with doctor's prescription/notes) during the exam is prohibited**
(16) **Using any type of smart glasses (unless a with doctor's prescription/notes) during the exam is prohibited**
(17) **Using any type of smart watches during the exam is prohibited**

Disability Accommodations: If you need academic accommodations for disability you must have document which verifies the disability and makes you eligible for accommodations, then you can schedule an appointment with the instructor to make appropriate arrangements.

Academic Dishonesty:
There is a zero-tolerance policy for academic dishonesty. Cheating of whatsoever will result in an automatic 'F' in this course and the matter will be turned over to the appropriate student disciplinary committee.

IMPORTANT EXAM DATES

Exam #1 (tentative; Covers Ch 2 ,3 & 4):
July 6th, 2017, Thursday, 10:00 a.m.-11:20 a.m, room F175

Exam #2 (tentative; Covers Ch 4, 6 & 7):
July 25th, 2017, Tuesday, 10:00 a.m.-11:20 a.m., room F175

Exam #3 (UNT official final exam schedule, Covers Ch 7, 8 & 9):
August 11th, 2017, Friday, 10:00 a.m.-11:20 a.m. room F175

UNT Official Academic Calendar: Summer 2017 - 10W Term

Date	Event
June 5, 2017	First Class Day
July 4, 2017	Independence Day (no classes: university closed)
August 10, 2017	Last Class Day
August 11, 2017	Finals

UNT Official Summer 2017 Final Exams

This session...	*Has final exams on this date...*
3W1	June 1, 2017
8W1	July 7, 2017
SUM	August 11, 2017
5W1	July 7, 2017
10W	August 11, 2017
8W2	July 28, 2017
5W2	August 11, 2017

Exams will meet at the same time and location assigned to the class unless other arrangements have been made.

MEEN 2110 Data Analysis
Schedule Overview
(Please note the schedule may change based on the needs during the semester**)**

Week	Date	Topic
#1	Jun. 5 Jun. 9	**Overview of syllabus; Ch.1: introduction** **Ch 2. Probability**
#2	Jun. 12 Jun. 16	**Ch 2. Probability** **Ch 3. Discrete random variable**
#3	Jun. 19 Jun. 23	**Ch 3. Discrete random variable** **Ch 3. Discrete random variable**
#4	Jun. 26 Jun. 30	**Ch 4. Continuous random variable** **Ch 4. Continuous random variable**
#5	Jul. 3 Jul. 7	**-Jul. 4th, 2017. Tuesday; Independence Day (no classes: university closed)** **-Exam #1: covers Ch 2,3 and 4**
#6	Jul. 10 Jul. 14	**Ch 4. Normal distribution** **Ch 4. Normal distribution**
#7	Jul. 17 Jul. 21	**Ch 6. Descriptive statistics** **Ch 7. Point estimate and sampling distribution**
#8	Jul. 24 Jul. 28	**Exam #2: covers Ch 4, 6 and 7** **Ch 7. Point estimate and sampling distribution**
#9	Jul. 31 Aug. 4	**Ch 8. Statistical interval for a single sample** **Ch 8. Statistical interval for a single sample**
#10	Aug. 7 Aug. 11	**Ch 9. Test of hypotheses for a single sample** **Ch 9. Test of hypotheses for a single sample**
	Aug. 11	**Exam #3 (Final): covers Ch 7, 8, 9**

Document History:
Dr. Xiaohua Li prepared on 05/28/2017