BUS292 STATISTICS II
2020–2021 SPRING TERM MIDTERM EXAM

BEFORE THE EXAM, PLEASE VERY CAREFULLY READ THE DIRECTIVES BELOW

DIRECTIVES

- Deadline is today (April 16, 2021) at 18:00 pm. Please submit your answers, before the deadline, over the system (http://ue6.mersin.edu.tr). Do not submit your answers through e-mail. Any answers submitted through e-mail will be discarded and absolutely no excuse will be accepted.
- Do not rewrite the questions again. Just provide your name, last name and student number along with your answers. No cover page is necessary.
- You can provide your answers in any format you like (e.g., word, excel, pdf, jpg, etc.). You may also answer the questions by handwriting. If you answer the questions by handwriting, just take the picture of every page and submit the pictures. Please do not forget to include your name, last name and student number in every page you submit.
- Do your homework all by yourself. Never use or copy your friend's homework. Working data for every student depends on the student number and therefore unique for each student. So, it will certainly be detected if you use or copy your friend's homework. Both you and your friend will get zero grade in such case. Therefore, neither use/copy your friend's homework nor give/show your homework to your friend. Do your homework all by yourself.
- In the following questions, use your student number to obtain the values for a, b and c. The last digit of your student number is "a", second last digit is "b", third last digit is "c" and finally second digit of your student number is "d". If any of these digits is zero, then assume it as 5. You can find the values of a, b, c and d by looking at your student number as follows: 1d-231-cba. For instance, if your student number is 12-231-174 then substitute d=2, c=1, b=7 and a=4. If your student number is 12-231-074 then substitute d=2, c=5, b=7, a=4. Please note that in this case c=5 because the corresponding digit of the student number is 0. Please carefully find the correct values of a, b, c and d using your student number. Any incorrect use of your student number will result a very low grade from the exam.
- This is not a test exam. Therefore, you should provide all the details of your answers, not just the results. Failing to provide the details will result a big loss of grade. Do not use computer and show your logic when solving the questions. Provide the formulas you used in computations. I will not give any credit if you just give the answers without details and logic (even if the answer is correct).
- Round the non-integer numbers only up to two decimal points. Do not round them to integers. For example if any result is 2.5553 then round it to 2.56, not to 3.
- The sign * means multiplication. For instance 8*2 = 16.
- Give your answers in English. Do not use Turkish.
- There are 3 questions in this exam.

Good Luck. Prof. Dr. Tevfik AYTEMİZ

QUESTIONS

1) It is important for airlines to follow the published scheduled departure times of flights. Suppose that one airline that recently sampled the records of 125 flights originating in Orlando found that a+b flights were delayed for severe weather, c+d flights were delayed for maintenance concerns, and all the other flights were on time. Estimate the percentage of on-time departures using (100-a-d)% confidence level. **(35 Points)**

(Please do not forget to substitute the letters "a", "b", "c" and "d" with the corresponding digits of your student number. If any of "a", "b", "c" or "d" is zero, set those to 5.)

2) Seven person sign up for an English course. However, Person 2 and Person 5 quit the course before it ends. Below table shows the test scores before and after the course. Find the (100-b-c)% confidence interval for the average increase in the test scores, based on the following data collected. **(35 Points)**

Person	Test Scores	
	Before the course	After the course
1	5*(a+b)	9*c
2	4*(a+d)	-
3	9*d	5*(b+c)
4	4*(a+c)	5*(c+d)
5	3*(b+d)	-
6	9*a	9*b
7	8*c	7*d

(Please do not forget to substitute the letters "a", "b", "c" and "d" with the corresponding digits of your student number. If any of "a", "b", "c" or "d" is zero, set those to 5. In your answer, please show the table with correct numbers, after substitution.)

3) Form a (100-a-c)% confidence interval for the population mean, using the information provided below. **(30 Points)**

$\bar{x}$ = a*b*c
n = b*d
s = a*d
σ = a*c*d

(Please do not forget to substitute the letters "a", "b", "c" and "d" with the corresponding digits of your student number. If any of "a", "b", "c" or "d" is zero, set those to 5.)