Miami Dade College
Kendall Campus

STA 2023 Statistics

Instructor:	Carlos Sotuyo	**Ref #:**	11647
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Email:	csotuyo@mdc.edu	**Department Phone:**	305-237-2431
Day/Time:	Mo-We-Fr 10:00AM - 10:50 AM	**Room:**	MDC Live

Office Hours

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
09:40 AM to 10:00 AM		09:40 AM to 10:00 AM		09:40 AM to 10:00 AM		

MDC Academic Calendar: https://www.mdc.edu/academics/calendar/
Jan/10 Last day to drop with refund. Jan/20 Holiday - Martin Luther King Jr. Day
Feb 17: Holiday – Presidents' Day.
Mar/14 Last day to withdraw from courses with a "W" grade
Mar 24-30: Spring Break - College Closed.
Apr 18: Holiday - Spring Recess.
May 2 (Friday)   Last day of classes and final exams.
Class website: https://mystatclass.com/index.html

Office Hours:_____

Mon-Wed-Fri: 09:40 AM to 10:00 AM. **Email policy:** expect a response within 24 hours, including weekends.

Course Description: _____

In this course, students will utilize descriptive and inferential statistical methods in contextual situations, using technology as appropriate. The course is designed to increase problem-solving abilities and data interpretation through practical applications of statistical concepts. This course is appropriate for students in a wide range of disciplines and programs. Student learning outcomes: students will visualize and summarize data using descriptive statistics; students will apply basic probability concepts to draw reasonable conclusions; students will employ concepts of random variables, sampling distributions, and central limit theorem to analyze and interpret representations of data; students will choose an appropriate method of inferential statistics, including confidence intervals and hypothesis testing, to make broader decisions based on sample data; students will model linear relationships between quantitative variables using correlation and linear regression. (3 hr. lecture).   Prerequisite: MAT1033, or MGF1106

Text and Requirements: _____

Digital Copy of Elementary Statistics 11th edition by Bluman.
ALEKS access is required. Register for ALEKS at www.aleks.com . Your Course ID is: VUR6C-E6GKY
All assignments are due the day before of the corresponding unit test.

Method of Instruction:_____
MDC Live: Lectures.

Technical Requirements: You are also expected to have a reliable internet connection and a working computer. A scientific calculator is required; a graphing calculator, **TI 84 or Casio 9750,** is recommended.

Attendance:_____
Attendance will be taken during each class period. If you expect to miss a class or have missed a class for a valid reason, email your instructor. A tool in Canvas, roll call attendance, allows instructors to record attendance for each class session.

> **WHAT CONSTITUTES AN ABSENCE IN THIS CLASS?**
>
> **1)** Physical/Virtual absence from a class
> **2)** Inactivity in Aleks (1-week inactivity = 1 absence)

Classroom Decorum:_____
In order to optimize your learning experience, classroom interruption must be kept to a minimum. Please make every effort to arrive on time and avoid causing an interruption if you need to leave early. Please turn your cell phone to a silent mode and avoid using it during class. In an emergency, you may excuse yourself and leave the classroom.

Registration and Withdrawal:_____
It is the students' responsibility to make sure they are registered for the course, and not dropped due to late payments or any other circumstances that may have come up. It is also the students' responsibility to drop the course before the drop deadline if they feel they will not be able to complete the course.

Academic Dishonesty Policy:_____
If a student is caught cheating, that student will automatically fail the assignment, and will be referred to the dean. For additional information on academic dishonesty policies, please refer to the Student's Rights and Responsibilities Handbook.

Grading Policy:_____
The grade for this course will be based on homework, ALEKS, (20%) and four equally weighted exams also on ALEKS (80 percent). There will be an optional final, which if taken will replace your lowest test score. Students may retake a Test. All exams will take place online proctored by respondus monitor. You can use the following formula to calculate your grade in the course:

$$Grade = 0.2(T_1 + T_2 + T_3 + T_4) + 0.20(Aleks\ assignments)$$

Your final grade will be distributed according to the following scale:

Average of 90-100%	A
Average of 80-89%	B
Average of 70-79%	C
Average of 60-69%	D
Average below 60%	F

Only an average of 69, or 79 or 89 are rounded up to 70, 80 and 90 respectively.

Resources:

Free tutoring available from the math lab. To schedule an appointment, use the link below:

https://www.mdc.edu/kendall/math/

Testing

Tests will be administered synchronously for the entire class, via ALEKS. The tests will be open from 9:30 AM to 11:30 AM. Within that two-hour window, the exam will be available to each student for **90 minutes**. **Under no circumstances will the test hours be extended**. Tests are proctored by respondus monitor. Missing a test for any reason, including internet connection issues, will result in a zero score for that exam. Students who miss two Tests will be dropped out of the course, unless proper written documentation of emergency is provided. If you miss an exam due to an emergency that would qualify as an excused absence the **make-up exam** will be administered during the final week of the course on **April 30th.** ONE make-up test only. Students are allowed to retake one test which will be available during the final week of the course. There will be a 7 points extra-credit (EC) assignment for each test. EC #1 consists of characterizing a dataset in Excel. EC # 2 to # 4 consist of reaching 90% or over on a Mock Test on ALEKS.

The comprehensive final and the test retake are optional. The Final, if taken, replaces the lowest test score; the retake replaces a particular test grade.

Excused absences for exams: the student's serious illness documented by a medical Doctor, death in immediate family, religious holiday observance of one's own faith or attendance to statutory governmental responsibilities.

Schedule may be changed at the professor's discretion, you're responsible to verify dates and topics.

Meeting	DATE	SEC.	TOPICS
1	01/06		Introduction to the course
2	01/08	1.1, 1.2	Descriptive/Inferential Statistics and Variable Types
3	01/10	2.1	Organizing Data
4	01/13	2.2, 2.3	Histograms and Other Types of Graphs
5	01/15	3.1	Measures of Central Tendency
6 & 7	01/17-22	3.2	Measures of Variation
8 & 9	01/24-27	3.3	Measures of Position
10 & 11	01/29-31		Review 1
12	02/03		Test 1
13 & 14	02/05-07	4.1	Sample Space and Probability
15	02/10	4.2	The Addition Rule
16 & 17	02/12-14	4.3	Multiplication Rule and Conditional Probability
18	02/19	4.4	Counting Rules.
19	02/21	4.5	Probability and Counting Rules.
20 & 21	02/24-26		Review 2
22	02/28		Test 2

23	03/03	5.1	Probability Distributions
24	03/05	5.2	Mean, Variance, Standard Deviation, and Expected Value
25 & 26	03/07-10	5.3	The Binomial Distribution
27	03/12	6.1	Normal Distribution
28	03/14	6.2	Applications of the Normal Distribution
29	03/17	6.3	The Central Limit Theorem
30 & 31	03/19-21		Review 3
32	03/31		Test 3
33	04/02	7.1	Confidence Intervals.
34	04/04	7.2	Confidence Intervals for means, Sigma Known
35	04/07	7.3	Confidence Intervals for means sigma unknown.
36	04/09	7.4	Confidence Intervals for Proportions
37	04/11	8.1	Hypothesis Testing.
38	04/14	8.2	Z-Test for Mean
39	04/16	8.3	T-Test for Mean
40	04/21	8.4	Z-Test for Proportion
41 & 42	04/23-25		Review 4
43	04/28		Test 4
44	04/30		Make up test / 1 retake
45	05/02		Final

Course Competency

Competency 1: The student will demonstrate knowledge of terminology by:

1. Defining statistical terms

Competency 2: The student will be able to describe, explore, and compare data by:

1. Constructing and interpreting frequency tables and graphs such as bar graphs, pie charts, and stem and leaf plots
2. Computing and interpreting the measures of centrality: the mean, median, mode, and midrange
3. Computing and interpreting the measures of dispersion: The range, variance, and standard deviation

Competency 3: The student will be able to apply the measures of positions by:

1 . Computing z-scores
2. Applying the Empirical Rule to the Normal Distribution
3. Applying the Chebyshev's Rule to the Non-Normal (or unknown) Distributions

Competency 4: The student will be able to apply the counting principles by:

1 . Defining the Fundamental Counting Principle
2. Computing the possible outcomes of compound events
3. Computing Combinations and Permutation

Competency 5: The student will demonstrate knowledge of probability by:

1. Describing a sample space and an event
2. Calculating probabilities of simple, compound, and conditional events

Competency 6: The student will demonstrate knowledge of random variables by:

1. Distinguishing between discrete and continuous random variables
2. Constructing a probability distribution for a discrete random variable and be able to compute its mean and standard deviation
3. Computing probabilities for random variables having a binomial distribution
4. Computing probabilities for random variables having a normal distribution
5. Applying the Central Limit Theorem
6. Approximating the Binomial Probability using the Normal Distribution

Competency 7: The student will demonstrate knowledge of confidence intervals by:

1. Constructing confidence intervals for the mean using the Z and t tables
2. Constructing confidence intervals for a proportion
3. Constructing confidence intervals for the difference of two means

Competency 8: The student will demonstrate knowledge of hypotheses testing by:

1. Identifying Type I and Type II errors
2. Identifying and interpreting p-values
3. Testing a single mean for large and small samples
4. Testing the difference between two means
5. Testing a single proportion

Competency 9: The student will demonstrate knowledge of bivariate data by:

1. Constructing and interpreting a scatter-plot
2. Computing and interpreting the linear correlation coefficient.

As graduates of Miami Dade College, students will be able to:

1. Communicate effectively using listening, speaking, reading, and writing skills.
2. Use quantitative analytical skills to evaluate and process numerical data.
3. Solve problems using critical and creative thinking and scientific reasoning.
4. Formulate strategies to locate, evaluate, and apply information.
5. Demonstrate knowledge of diverse cultures, including global and historical perspectives.
6. Create strategies that can be used to fulfill personal, civic, and social responsibilities.
7. Demonstrate knowledge of ethical thinking and its application to issues in society.
8. Use computer and emerging technologies effectively.
9. Demonstrate an appreciation for aesthetics and creative activities.
10. Describe how natural systems function and recognize the impact of humans on the environment.