

<b>Instructor:</b>	Carlos Sotuyo	<b>Ref #:</b>	5298
<b>Office:</b>	3348	<b>Term:</b>	2255
<b>Email:</b>	csotuyo@mdc.edu	<b>Department Phone:</b>	305-237-2431
<b>Day/Time:</b>	Mo-We-Fr 09:15AM - 10:20 AM	<b>Room:</b>	MDC Live

**Office Hours**

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
10:20 AM to 10:40 AM		10:20 AM to 10:40 AM		10:20 AM to 10:40 AM		

MDC Academic Calendar: <https://www.mdc.edu/academics/calendar/>

May/15: Last day to drop with refund.

May/26: Holiday – Memorial Day.

July 1<sup>st</sup>: Last day to withdraw from courses with a “W” grade

July 4<sup>th</sup>: Holiday – Independence Day.

Aug 1<sup>st</sup> (Friday): Last day of classes and final exams.

Class website: <https://mystatclass.com/index.html>

**Office Hours:**

Mon-Wed-Fri: 10:20 AM to 10:40 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 11<sup>th</sup> edition by Bluman.

ALEKS access is required. Register for ALEKS at [www.aleks.com](http://www.aleks.com). Direct link to your class ALEKS page will be available on CANVAS. ALEKS 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 and webcam. A scientific calculator is required; a graphing calculator, **TI 84 or Casio 9750**, is highly 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. 90 minutes tests, to be open for two hours: from 8:45 AM to 10:45 AM. **The test will close at 10:45 AM. Once closed, it will not reopen. No exceptions.** Tests are proctored by respondus monitor with webcam enabled. 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 July 30th. ONE make-up test only. Students are allowed to retake one test on July 30th. There will be a 7 points extra-credit (EC) assignment for each test. EC #1 consists of characterizing a dataset in Excel.

All other extra credits consist of reaching 90% or over on the corresponding 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	5/12	1.1, 1.2	Descriptive/Inferential Statistics and Variable Types
2	5/14	2.1	Organizing Data
3	5/16	2.2, 2.3	Histograms and Other Types of Graphs
4	5/19	3.1	Measures of Central Tendency
5	5/21	3.2	Measures of Variation
6	5/23	3.3	Measures of Position
7	5/28		Review 1
8	5/30		Test 1
9	6/02	4.1, 4.2	Sample Space and Probability. Th addition rule.
10	6/04	4.3	Multiplication Rule and Conditional Probability
11	6/06	4.4	Counting Rules.
12	6/09	4.5	Probability and Counting Rules.
13 & 14	6/11-6/13		Review 2
15	6/16		Test 2
16	6/18	5.1	Probability Distributions
17	6/20	5.2	Mean, Variance, Standard Deviation, and Expected Value
18	6/23	5.3	The Binomial Distribution

19	6/25	6.1	Normal Distribution
20	6/27	6.2	Applications of the Normal Distribution
21	6/30	6.3	The Central Limit Theorem
22 & 23	7/02-7/07		<a href="#">Review 3</a>
24	7/09		<b>Test 3</b>
25	7/11	7.1 & 7.2	Confidence Intervals. CIs for Mean Sigma Known
26	7/14	7.3	Confidence Intervals for means sigma unknown.
27	7/16	7.4	Confidence Intervals for Proportions
28	7/18	8.1 & 8.2	Hypothesis Testing. Z-Test for Mean
29	7/21	8.3	T-Test for Mean
30	7/23	8.4	Z-Test for Proportion
31	7/25		<a href="#">Review 4</a>
32	7/28		<b>Test 4</b>
33	7/30		<b>Make up test + 1 retake</b>
34	8/01		<b>Final</b>

<b>Course Competency</b>
<b>Competency 1:</b> The student will demonstrate knowledge of terminology by:
1. Defining statistical terms
<b>Competency 2:</b> 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
<b>Competency 3:</b> 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
<b>Competency 4:</b> 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

<b>Competency 5:</b> The student will demonstrate knowledge of probability by:
<ol style="list-style-type: none"> <li>1. Describing a sample space and an event</li> <li>2. Calculating probabilities of simple, compound, and conditional events</li> </ol>
<b>Competency 6:</b> The student will demonstrate knowledge of random variables by:
<ol style="list-style-type: none"> <li>1. Distinguishing between discrete and continuous random variables</li> <li>2. Constructing a probability distribution for a discrete random variable and be able to compute its mean and standard deviation</li> <li>3. Computing probabilities for random variables having a binomial distribution</li> <li>4. Computing probabilities for random variables having a normal distribution</li> <li>5. Applying the Central Limit Theorem</li> <li>6. Approximating the Binomial Probability using the Normal Distribution</li> </ol>
<b>Competency 7:</b> The student will demonstrate knowledge of confidence intervals by:
<ol style="list-style-type: none"> <li>1. Constructing confidence intervals for the mean using the Z and t tables</li> <li>2. Constructing confidence intervals for a proportion</li> <li>3. Constructing confidence intervals for the difference of two means</li> </ol>
<b>Competency 8:</b> The student will demonstrate knowledge of hypotheses testing by:
<ol style="list-style-type: none"> <li>1. Identifying Type I and Type II errors</li> <li>2. Identifying and interpreting p-values</li> <li>3. Testing a single mean for large and small samples</li> <li>4. Testing the difference between two means</li> <li>5. Testing a single proportion</li> </ol>
<b>Competency 9:</b> The student will demonstrate knowledge of bivariate data by:
<ol style="list-style-type: none"> <li>1. Constructing and interpreting a scatter-plot</li> <li>2. Computing and interpreting the linear correlation coefficient.</li> </ol>

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.