

Instructor:	Carlos Sotuyo	Ref #:	2248
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Day/Time:	Tues-Thrs 6:40 PM – 10:00 PM	Room:	https://us.bbcollab.com/guest/530db67960754323bf1d76d3c0c72ca0

Office Hours

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	5:30 -6:30 PM		5:30 -6:30 PM			

Withdrawal Date, with refund: June 23. Withdrawal Date, with W: July 16. Holidays: July 3-5, Independence Day.

Course Description:

This course will introduce students to statistical methods. Students will learn topics to include collecting data, grouping data, presenting data, measures of central tendency, dispersion, probability, hypotheses testing, confidence intervals, and correlation. (3 hr. lecture)

Prerequisite: MAT1033, or MGF1106

Text and Requirements:

Elementary Statistics 10th edition by Bluman. We will be using [ALEKS](https://www.aleks.com) for this course. Please register for ALEKS at www.aleks.com. Your Course ID is: M3FF4-64UQU All assignments are due the day of the corresponding unit test.

Method of Instruction:

MDC live: Lectures via blackboard (Synchronous).

Technical Requirements:

Access to a personal computer running Windows or MACOS with a working web camera and microphone. A scientific calculator is required; a graphing calculator, TI 84 or Casio 9750, is recommended

Attendance:

Attendance will be taken during each class period. Students who miss two or more classes may be withdrawn from the course. If you expect to miss a class or have missed a class for a valid reason, email your instructor.

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. In addition, while attending the virtual classroom, please be sure your microphone is on mute unless asked to unmute your microphone.

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 and four equally weighted exams. There will be an optional final, which if taken will replace your lowest test score. All exams will take place online. You can use the following formula to calculate your grade in the course:

$$Grade = \frac{T_1 + T_2 + T_3 + T_4 + HW}{5}$$

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.

Tests will be administered synchronously for the entire class, via ALEKS (proctored by [respondus monitor](#)). Missing a test for any reason will result in a zero score for that exam. If you miss an exam due to an

emergency that would qualify as an excused absence, you must inform your instructor within 24 hours of the scheduled exam. In the case of an excused absence for an exam, the make-up exam will be administered in the classroom on 7/29 during the final week of the course. 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. **Note:** missing a test due to technical issues (internet connection, for example) qualifies as a valid reason; therefore, the make-up test will be administered in the classroom on July 29, the day of the optional final exam.

Resources:

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

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

Tentative Schedule

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

<u>DATE</u>	<u>SEC.</u>	<u>TOPICS</u>
6/22	1.1, 1.2	Descriptive/Inferential Statistics and Variable Types
	2.1	Organizing Data
	2.2	Histograms
	2.3	Other Types of Graphs
	3.1	Measures of Central Tendency
	3.2	Measures of Variation
	3.3	Measures of Position
6/24		Review
6/29		Test 1 on ALEKS
7/1	4.1	Sample Space and Probability
	4.2	The Addition Rule
	4.3	Multiplication Rule and Conditional Probability
	4.4	Counting Rules
	4.5	Probability and Counting Rules
7/6		Review
7/8		Test 2 on ALEKS
7/13	5.1	Probability Distributions
	5.2	Mean, Variance, Standard Deviation, and Expected Value
	5.3	The Binomial Distribution
	6.1	Normal Distribution
	6.2	Applications of the Normal Distribution
	6.3	The Central Limit Theorem
7/15		Review
7/20		Test 3 on ALEKS
7/22	7.1	Confidence Intervals for Mean Sigma Known
	7.2	Confidence Intervals for Mean Sigma Unknown
	7.3	Confidence Intervals for Proportions

	8.1	Hypothesis Testing
	8.2	Z-Test for Mean
	8.3	T-Test for Mean
	8.4	Z-Test for Proportion
7/27		Review
7/29		Test 4 on ALEKS
7/29		(Optional)Final on ALEKS

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.