Course Syllabus

Course Title: Introduction to Statistics/Business Statistics

Course Prefix/Section: MAT 135-621 (BUS 226-621)

Time/Day : Sat 9:00-12:40

Location:ARV 7122 ARVADA CAMPUS, LOWER BUILDING

Instructor: Bill Thompson Telephone: (303) 914-6449 (voice-mail 24-7)

Email: bill.thompson@rrcc.edu

(I check my email once daily Monday through Friday)

Office: WE 3711

Required Texts: Elementary Statistics, Triola, 12th edition

Required Materials: Graphing Calculator required

Introduction to Statistics: This course includes data presentation and summarization, introduction to probability concepts and distributions, statistical inference, estimation, hypothesis testing, and comparison of population, correlation and regression.

Course Pre-requisites: Math 099 Grade C or better or Placement Test

Math Tutoring Available in the LaRC **Help!**

Withdrawal date: September 19

End of Semester: November 18

DISABILITY SERVICES

ADAAA (Americans with Disabilities Act Amendments Act of 2008) and Section 504 of the Rehabilitation Act of 1973: Red Rocks Community College is committed to access for students with disabilities. If you are a student with a disability and need assistance or are interested in requesting accommodations, please contact the Office of Disability Services (ODS). Faculty is not obligated to provide accommodations without proper notification by the ODS. Students may contact the ODS staff by telephone or email to make an intake appointment at 303-914-6733 or ods@rrcc.edu. The ODS is located in Suite 1182 at the Lakewood campus. More information is available at www.rrcc.edu/disabilityservices.

Math is not a spectator sport.

You may have heard this before. The meaning is quite simple. You cannot learn math without coming to class regularly, participating in class, and doing all of your homework as soon as it is assigned. When I say, "participating in class," I mean paying attention to what is going on during class and asking questions. Do not be afraid to ask me questions and come to me for help. If you wait to ask questions and get help, you will fall behind. Also, try to find a study partner. You can help each other and it's more fun to work with someone. And if you miss a class, you can ask your study partner for missed materials (or go to the D2L website or call me). Additionally, come to class prepared to learn. Read the section to be covered that day before you come to class. Have your homework completed and be ready to ask questions over the homework, if you have any, at the beginning of class. Lastly, come to class on time and turn your cell phone off (or on silent if you must have it on.)

Where to Get Help: Of course, you can always come to me for help. There is also free tutoring in the Learning Commons by the Main Entrance. The important thing is to get help as soon as possible. The longer you wait, the further you fall behind.

Be respectful of your classmates and teacher.

Be on time for class. *Wait your turn to speak. The rule in general is this: When someone else is speaking, you are not.* If you have a cell phone, turn if off or put it on silent mode. *Thanks!*

CLASS PROCEDURES

Attendance

Attendance is expected at all class meetings, and will be recorded. If you must miss class, please inform the instructor ahead of time and get the assignments.

Exams

There will be several major examinations. The dates of these examinations are announced ahead of time—any deviation from these dates must be approved by the instructor in advance.

Quizzes

There will be a short quiz nearly every week. Some of these quizzes may be required to be taken on Desire 2 Learn. Missed quizzes should be made up at the next class session, and must be done outside of class time.

Grades

Students earn their grade, and no one is promised a grade. There will be no extra credit assignments. There will be no incompletes or AW's. If you need to drop out, withdraw formally.

Responsibility

The instructor is here to instruct, help, provide guidance and direction, counsel and coach the student, but the ultimate responsibility for learning resides with the student. It is the responsibility of the student to actively seek the best educational environment, and to act on his/her own behalf to see that assignments are done and turned in on time. It is the responsibility of the student to see that missed assignments are made up, and make up work is submitted in a timely manner. A failure to plan ahead on your part does not constitute an emergency on my part.

Class Standards

In addition to any standards for behavior adopted by the class, students are referred to the student handbook for the student code of conduct. It is also located in the catalog.

Academic dishonesty (cheating) will be punished with a penalty ranging from loss of one letter grade to expulsion from school, depending on the circumstances.
Cell phones, earphones and computers
1. In order to ensure the optimal learning environment, students are asked to turn cell phones and/or pagers to vibrate during class time, and to answer calls only in emergency situations. Cell phones are not to be used for texting during class. THERE WILL BE NO CELL PHONES IN USE DURING EXAMS.
2. Laptops may not be used during class unless approved by the instructor.
3. No earphones. You can't actively participate in class if you are listening to music. (Earphones may be allowed on test days.)
TOPICS TO BE COVERED:
CHAPTER ONE Introduction to Statistics
1-2 Statistical and Critical Thinking
1-3 Types of Data
1-4 Collecting Sample Data
CHAPTER TWO Summarizing and Graphing
2-2 Frequency Distributions
2-3 Histograms
2-4 Graphs
CHAPTER THREE Describing, Exploring, and Comparing Data
3-2 Measures of Center
3-3 Measures of Variation
3-4 Measures of Relative Standing and Boxplots
CHAPTER FOUR Probability
4-2 Basic Concepts
4-3 Addition Rule
4-4 Multiplication Rule: Basics
4-5 Multiplication Rule: Complements
4-6 Counting
CHAPTER FIVE Discrete Probability Distributions
5-2 Probability Distributions
5-3 Binomial Probability Distribution
5-4 Parameters for Binomial Distribution
CHAPTER SIX Normal Probability Distributions
6-2 The Standard Normal Distribution
6-3 Applications
6-4 Sampling Distributions and Estimators
6-5 The Central Limit Theorem
6-7 Normal as Approximation to Binomial
CHAPTER SEVEN Estimates and Sample Sizes
7-2 Estimating a Population Proportion
7-3 Estimating a Population Mean
7-4 Estimating a Population Standard Deviation or Variance
CHAPTER EIGHT Hypothesis Testing
8-2 Basics of Hypothesis Testing
8-3 Testing a Claim about a Proportion

8-4 Testing a Claim about a Mean
CHAPTER NINE Inferences from Two Samples
9-2 Two Proportions
9-3 Two Means: Independent Samples
CHAPTER TEN Correlation and Regression
10-2 Correlation
10-3 Regression

Competencies View:

1. Have a working knowledge of and distinguish between the two branches of statistics, descriptive statistics and inferential statistics.
2. Distinguish between qualitative and quantitative data.
3. Distinguish between the following levels of measurement: nominal, ordinal, interval, and ratio.
4. Define a population and a sample.
5. Define a parameter and a statistic.
6. Recognize that Greek letters are used to represent parameters and English letters are used to represent statistics.
7. Present various methods of depicting data and the statistical measures utilized in descriptive statistics.
8. Organize data into a grouped frequency table.
9. Present data in the form of histograms, stem and leaf diagrams, and/or box and whisker plots.
10. Interpret histograms, line graphs, bar graphs, pie charts, and stem and leaf diagrams.
11. Use formulas to calculate the following measures of central tendency: mean, median, mode, and midrange.
12. Use formulas to calculate the following measures of dispersion: range, variance, and standard deviation.
13. Use appropriate procedures to find the following measures of position in a set of data: z-score, percentile, quartile, and decile.
14. Define percentile and use this to interpret percentile ranks.
15. Recognize and identify various shapes of data distributions.
16. Utilize the basic definitions to calculate simple probabilities.
17. Utilize the addition rule to calculate probabilities for the occurrence of one event or another event.
18. Demonstrate an understanding of how events are complementary and calculate the probability that an event does not occur.
19. Use counting principles to determine the number of ways various events can occur.
20. Develop the concepts of probability distributions.
21. Distinguish between discrete and continuous random variables.
22. Have a working knowledge of the concept of probability distributions.
23. Use formulas to calculate the mean, variance, standard deviation, and expected value of a probability distribution.
24. Calculate probabilities in binomial experiments.
25. Recognize and identify various shapes of probability distributions.
26. Demonstrate knowledge of the relationship between probability and the area under a probability curve.
27. Describe the normal distribution and the associated statistics and probabilities.
28. Determine probabilities using the standard normal distribution.

29. Determine z-scores that correspond with observations in non-standard normal distributions.
30. Determine scores that correspond to given probabilities.
31. Use the normal distribution to approximate probabilities associated with a binomial experiment and know the conditions for which these approximations are appropriate.
32. Know the meaning of a sampling distribution.
33. Develop the concepts of point estimates and interval estimates and present methods for determining sample size.
34. Estimate the value of a population mean and determine confidence intervals for a population proportion.