Catalog description: An introductory course in the analysis and interpretation of quantitative data. Attention is given to the binomial distribution, the normal distribution, sampling, introductory probability theory, and hypothesis testing. Real world applications are used with computer software for statistical analysis.

Prerequisite: Successful completion of Precalculus or Calculus. Students who have finished the required Calculus course will find the math part of the course easier than those who have not successfully completed Calculus.

Overview of course content: Statistics is a way of reasoning, along with a collection of tools and methods, designed to help us understand the world. This course will introduce you to fundamental concepts and methods of Statistics. Understanding basic statistics is required for data analytics and decision making with data. Some of the key ideas to be studied include data collection strategies and the scope of conclusions based on the collection strategy, the role of randomness in collecting data and drawing conclusions, graphical and numerical summaries of data, assessing statistical significance, and estimating with confidence.

This course is designed to introduce the student to concepts and applications of statistics. Statistics, the discipline, provides strategies and tools for using data to gain insight into problems. In this course, emphasis is placed on data analysis and interpretation of statistical test results.

Objectives:

1. Demonstrate that you can to read data critically and with comprehension.
2. Produce data that provide clear answers to properly posed questions.
3. Apply sound and appropriate statistical methods for drawing trustworthy conclusions based on the data.
4. Appropriately and statistically defend your descriptions and inferences about samples and populations.
5. Communicate the conclusions of statistical studies.

Required text, software and other material:

- Text - Business Statistics: A First Course by Norean Sharpe, Richard De Veaux, and Paul Velleman, 3rd edition, Pearson, 2017. Check D2L for specific information on purchasing this text. You are required to have access to the on-line homework and some version of the text.
• MyStatLab - the portal to this course with access to homework problems, study guide, on-line tests and quizzes. You purchase access to this portal.

• Calculator - you won’t be able to use your cellphone for calculations during exams.

Expectations:

Prior to class

• The course will be taught as a modified flipped course. In this case YOU ARE EXPECTED TO READ AND SEEK TO UNDERSTAND THE TEXT PRIOR TO CLASS.

• Answer homework questions on the reading. These will be graded as effort type grade. In other words, you will be given a set of multiple choice questions with two chances to correctly answer the question. I expect you to spend enough time on the questions to get 100% correct and UNDERSTAND why your final answer is correct and the others are incorrect.

In class

The majority of class time will be spent on activities and assignments that reinforce and further explain the reading. I expect you to

• Be there with your computer and be focused on the material
• Actively participate
• Have a list of questions raised by the reading

After class

• Summarize the content in your own wording
• Do the homework problems assigned on the class material (due at 8 am the day of the next class). You will have two chances to get the correct answer on these problems.

Integrity: Central to the purpose and pursuit of any academic community is academic integrity. All members of the Westminster community, including students, faculty, staff, and administrators, are expected to maintain the highest standards of honesty and integrity, in keeping with the philosophy and mission of the College. Academic dishonesty is a profound violation of this code of behavior.

The paragraph above is taken from the Westminster College 2016-2017 Undergraduate Catalog, page 54. It is imperative that you never submit the work of others as though it is your own work nor should you ever allow anyone else to use your work without giving credit to you. The penalty for academic dishonesty in this class is minimally the grade of 0 on the assignment and, except for unusual circumstances, a grade of F for the course. Any event of academic dishonesty is reported to the Associate Dean of the College. Other details of violations and consequences are given in the Catalog.

Attendance: Daily attendance in class is expected and absences are noted. It is your responsibility to attend class and learn the material.
Assessment and Evaluation - No late work will be accepted! A score of zero will be recorded.

1. Homework

   (a) Homework on reading, on-line
       Assigned daily and due at 8 am the next class day. This portion of the evaluation is accessed via the MyStatLab portal. You should assume that you have reading assignments for each class period. You may assume that any homework due on the next class period will be posted by five pm of the class day. For example, material due on Wednesday will be posted by five on Monday. All of this work is labeled as “homework” on the portal. This material is the prep for the next class.

   (b) Homework after class, on-line homework, quizzes and tests
       Assigned daily and due at 8 am the next class day. This portion of the evaluation is accessed via the MyStatLab portal and will be assigned AFTER the material is discussed in class. Every assignment in the section is equally weighted and will be labeled as “quiz” on the portal. This material is the daily practice and is meant to keep you up-to-date in the course.

   (c) Homework graded by me
       Assigned, typically, weekly when we have completed a chapter. You may choose to do this homework with ONE partner of your choice and you will turn in ONE word processed answer for you and your partner. You are responsible, with no excuses, for knowing that the homework has been posted and the due dates. Homework will be announced in class and listed on the D2L site. These problems are models of the problems that will typically be on the exams. They require analysis and are short answer.

2. Two mid-terms

3. Cumulative final

   **Exams:** Mid-term exams are tentatively scheduled for September 25 and November 10. The final exam is scheduled for Thursday, December 14 8-10:30 am. The final exam is cumulative. Makeup examinations procedures as explained on page 60 of the 2016-2017 Undergraduate Catalog will be followed. Students requesting makeup examinations should expect a more difficult examination than that given during the regularly scheduled exam time.
Grades:

- Homework on the reading 5%
  lowest 5 grades dropped
- Homework problems 10%
  lowest 5 grades dropped
- Chapter problems 10%
- Mid-term 1 20%
- Mid-term 2 25%
- Final 30%

Grade cutoffs will be no higher than A: 93, A-: 90, B+: 87, B: 83, B-: 80, C+: 77, C: 73, C-: 70, D: 60.