MATH 210H – Elementary Statistics

1 credit
Instructor: Tracy Chisholm

Course Description: An introduction to statistical methods of gathering, presenting and analyzing data. Topics include probability and probability distributions, confidence intervals, hypothesis testing, and linear regression and correlation.

- Data Collection & Sampling
- Descriptive Statistics
    - Organizing & Summarizing Data
    - Numerically Summarizing Data
    - Correlation & Regression
- Probability & Probability Distribution
    - Probability
    - Discrete Probability Distributions
    - The Normal Probability Distribution
- Inference: From Samples to Population
    - Sampling Distributions
    - Eliminating the Value of a Parameter
    - Hypothesis Tests Regarding a parameter
    - Inferences on Two Samples
    - Inference on Categorical Data
    - Comparing Three or More Means/ANOVA
    - Inference on the Least-Squares Regression model and Multiple Regression

Technology will be used to enhance learning and mirror statistical applications and practices in the larger world.

Co-requisite: MATH 210 – Elementary Statistics

Course Objectives:
- To enhance the student's understanding of basic probability and statistical concepts.
- To enhance the student's understanding of how statistics are relevant in real-life situations and in decision making processes.
- To develop an understanding of statistical symbols that can be used in the final project.
- Provide student with basic understanding of methods used in classification and analysis of variation.
- To develop knowledge and application of a statistical computer program.

Class Schedule: TBA – will work with students to find an available time

Instructor: Tracy Chisholm

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Office Hours: Mon-Fri 3-4pm and Thursday 2-4pm or by appointment

Tentative Course Outline:

Dates	
Week 1	Meet with instructor about possible projects
Week 2	Have project selected, start working on layout of project – consult with instructor and advisor
Week 3	Create and conduct survey and/or experiment
Week 4	Gather data
Week 5	Analyze data
Week 6	Analyze data
Week 7	Analyze data
Week 8	Analyze data
Week 9	Analyze data
Week 10	Analyze data
Week 11	Create report
Week 12	Continue to work on report
Week 13	Continue to work on report
Week 14	Submit rough draft of project
Week 15	Consult with instructor and advisor to make corrections
Week 16	Present final project

Required Text: *Statistics: Informed Decisions Using Data, 5th Edition* by Michael Sullivan, III Pearson Publishing.
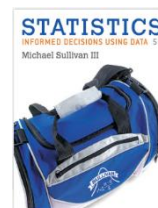
Course Requirements:

The student will choose a topic or project that pertains to his or her major. With the guidance of their advisor and the statistics instructor, the student will complete a detailed paper with conclusions using statistical methods.

Grading Procedure: Satisfactory/Unsatisfactory

General Education Competencies/Learning Outcomes:

Competency/Goal 3: Demonstrates the ability to solve a variety of mathematical problems

    Learning Outcome 1: Utilizes mathematical skills to solve problems

- Performance Indicator 1: Solves problems using an appropriate method
- Performance Indicator 2: Produces graphs

    Learning Outcome 2: Employs critical thinking skills to solve problems

- Performance Indicator 1: Interprets research information
- Performance Indicator 2: Write conclusions from information collected
- Performance Indicator 3: Utilizes pertinent information to solve word problems

Relationship to Campus Theme: The student will apply statistics to a project in their field of study ot topic of interest. The graphing calculator and StatCrunch software will be used to model application problems in nature, economics, science, psychology, etc. Communication with others will be emphasized.

Classroom Policies:

- Come to every class on time and always be prepared!
- Regular participation is expected.
- Cell phones can only be used in emergency situations and they must be turned to vibrate. Please use common sense with regard to electronic devices. You cannot learn effectively and are not actively involved in class if you are being continually interrupted and distracted. If you must answer your phone, please quietly leave the room.

Academic Integrity: The academic community is operated on the basis of honesty, integrity and fair play. It is the expectation that all students, as members of the college community, adhere to the highest levels of academic integrity. This means that:

- Students are responsible for submitting their own work. Student work must not be plagiarized.

- Students must not cooperate on oral or written examinations or work together on evaluated assignments without authorization.

- If there is evidence of cheating, the student will receive an F on the assignment or exam.

Disabilities and Special Needs: If you have a disability for which you need accommodation, please let me know as soon as possible. You can also contact the Disability Service coordinator at 701-228-5672.

The syllabus is a living document that is subject to change. Students will be informed of any changes.