Math 130- Online (Finite Math)   **Steve Stein, PhD**
Fall 2017   **Office phone N/A**
Office: Black 225-32   **Cell phone   509-929-2019**
  Virtual Office hours: <u>by appointment</u>   **steve.stein@cwu.edu**

Course Overview: At CWU, Finite math is one of the courses that can be selected to satisfy the reasoning requirement for graduation and it is commonly taken as a prerequisite for statistics. It is real-world applicable and serves to prepare students for research and statistical courses at a later date.

I am not trying to suggest that you are all going to find this course practical or even enjoyable. Based on experiences from courses over the years some of you will find it frustrating, but I hope that is a very low number of you. Upon completion of my undergraduate mathematics degree I remember thinking, "How can I use this?" And to my disappointment I didn't have an answer. After 10 or so years of teaching high school mathematics I asked the same question (how will my students use this?) and I still had a similar answer. Mathematics courses should not just prepare us for some "future" situation (additional courses…), but we should find some immediate value.

I want for this to be a course that has real world application! What does that mean to me? Successful people in life can work well with others. The most successful make others better and allow others to make them better! Therefore, this class will include group assignments (projects). Also, I want for us to not just recognize "formulas", but also to be able to use them to find answers to (somewhat) interesting and (somewhat) practical questions. This course will deal with questions on using probability to rank items from least likely to most likely; predict likely outcomes based on probability; using statistics to understand events that occur around us (normal curve); and understanding "Confidence Intervals" and how we can use them in real life to make projections! Realize that this is an introductory course and so we will deal with these questions at rudimentary levels. The majority of your grade will be based on these projects.

Some are already asking, "Do we have to work in a group?" Twenty-five percent of your grade for each project will be based on how you and your group work together and each group must provide me with a group evaluation of your work.

 Textbook:

       Finite Mathematics, introductory probability & statistics (Owen & Cutlip) <u>any edition.</u>

Required tools: Access to Canvas, access to a scanning device, graphing calculator and effort!

Topics covered:

   1. Counting and probabilities
          Sorting and counting (tables, Venn diagrams, and permutations & combinations
          Probability

Reliability of systems
2. Variables and probability distributions
Turning probability events into a mathematics model (using variables
and probability together)
Describing data (Is there a pattern in the data and how can we use that?)
Two types of patterns that we see (Binomial distribution & Normal distribution)

3. Introduction to Statistics (How can we use probability?)
Graphical techniques (graphs)
Measures of Central Tendency (mean, median, and mode)
Measures of dispersion (Is the data spread out or constant? Think random or not)
Confidence intervals (think elections and the +/- with each poll shown)
4. Using statistical tables
Binomial probability distributions
Standard normal distribution table

<u>CWU posted grade scale will be used</u>-- I typically <u>do not round</u> grades. Grades are based on an accumulation of points from all assignments—point values for assignments are posted on the assignments in Canvas.

Student outcomes will include comprehension of topics as demonstrated by completion of assigned homework, quizzes, and tests. In addition, application of topics related to probability and statistics must be demonstrated by successful completion of projects.

Evaluation and Assessment: homework, quizzes, tests, and project grades will predominantly be used to evaluate student learning and progress. Homework is assigned and submitted approximately every 10 days to two weeks for a grade (completion and effort) and worksheets are completed as part of the "lecture" and submitted along with the homework. Homework assignments must scanned into a pdf and uploaded into Canvas (they will not be accepted through email).

Note-- homework must be scanned and uploaded to Canvas as a pdf (I know that I just said that, but some students don't take me seriously with just one request.) When you submit, **please do so in a single document**. Also, while most of the homework problems are available in the solutions manual, I encourage you to not use this resource until after you attempt the homework. All submissions are through Canvas (**Do not send files to me through email, I will not accept them**—I know, I just said this.)

All uploads need to be in a single document and not a number of separate files—third time, I am serious about this.

The final is difficult and a number of students drop their grade by one letter grade.

Necessities

1. Participation- I am encouraging all students to complete the worksheets prior to watching the recording where I do them. A reminder is always in order that math is not a "spectator sport".
2. PLEASE, DO NOT ask me for an exception AFTER THE FACT. I will work to accommodate <u>all needs and help you to be successful</u>, but it is unprofessional to request an exception after something is due.
3. My cell phone number is provided for you when you have need to speak with me. If you text, please provide your name and the class (509-929-2019).
4. Scientific calculator (TI- 83 is recommended)
5. Regular communication through office "hours", email, or phone call.
6. Provide course feedback.

Calendar & Assignments: Are found under the "Syllabus" tab on Canvas-- Because I take feedback from students as the course progresses, some due dates will be adjusted,

Canvas: Course materials will be posted on Canvas and all resources and links will also be available.

I will do my best to meet the needs of all students. If you have a documented need, please schedule an appointment so that we can determine how to best meet your needs and provide me with documentation through student services.