MAT120  Introduction to Statistics

As a result of home and classroom study, the students at the termination of this course will demonstrate the following knowledge and skills:

<table>
<thead>
<tr>
<th>OUTCOMES</th>
<th>ACTIVITIES</th>
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| Calculate measures of central tendency and variation for sets of grouped and ungrouped data. | 1. Calculate the mean, median and mode for a set of data.  
2. Construct a histogram for a set of data.  
3. Construct a stem plot for a set of data.  
4. Calculate the standard deviation for a set of data.  
5. Identify the skewness of a set of data. | 1. Hand-in assignments.  
2. In-class problems.  
3. In-class tests. |
| Calculate areas under the normal curve | 1. Use the Rule of Thumb for areas under the normal curve.  
2. Calculate the z-score of a datum.  
3. Calculate areas under the normal curve using a table of values.  
4. Apply this knowledge to real-world problems. | 1. Hand-in assignments.  
2. In-class problems.  
3. In-class tests. |
| Use linear regression for prediction | 1. Calculate the correlation between two data sets.  
2. Identify explanatory and response variables.  
3. Calculate the equation of the linear regression line.  
4. Use the linear regression line to make predictions. | 1. Hand-in assignments.  
2. In-class problems.  
3. In-class tests. |
| Distinguish between an observational study and an experiment | 1. Identify the treatment in an experiment.  
2. Evaluate for bias in the selection of the sample.  
3. Make a random selection from a list using a table of random numbers.  
4. Explain the use of a control group to evaluate extent of placebo effect. | 1. Hand-in assignments.  
2. In-class problems.  
3. In-class tests. |
| Design an opinion survey, choose a random unbiased sample, and conduct the survey | 1. Suggest a topic.  
2. Write sample questions.  
2. In-class problems.  
3. In-class tests.  
4. Written survey report. |
| Use computer tools for statistical analysis | 1. Enter data into Excel spreadsheet.  
2. Use the graphing calculator to calculate 1-variable and 2-variable statistics. | 1. Hand-in assignments.  
2. In-class problems.  
3. In-class tests. |