COURSE OVERVIEW:

STATISTICS 468 is intended to be an introduction to classical statistical inferences as used in the behavioral sciences. Theory, concepts, computations, and interpretations will be emphasized, with the assumptions that the student possesses an understanding of basic mathematics and algebra.

COURSE OBJECTIVES:

Students will be able to:

1. Recognize the difference between descriptive and inferential statistics; between variables and constants; between discrete and continuous variables; between the four types of numeric scales.

2. Summarize data by constructing graphic representations.

3. Determine the central tendency of a distribution by using mean, median, and mode.

4. Determine the variability of a distribution by using range, variance, and standard deviation.

5. Use and explain the utility of standard scores and their relationship to the normal distribution.

6. Explain the logic of statistical inference, Null and Alternative hypotheses, and Type I and Type II statistical errors.

7. Select and use appropriate statistical formulas for the testing of hypotheses.
of data in nominal, ordinal, interval, and ratio scales.

8. Select and use appropriate tables for determining statistical significance.

9. Select and use the appropriate ANOVA designs for statistical analysis.

10. Perform and interpret correctional coefficients for nominal, ordinal, interval, and ratio scaled data.

11. Recognize the difference between normal and binomial distributions.

12. Select and use the appropriate nonparametric statistics for statistical analysis.

**INSTRUCTIONAL ACTIVITIES:**

The course will consist of lectures, in-class demonstrations and readings to assure that competencies are met. Class attendance is expected, therefore, lectures will not be re-presented on an individual basis. Students missing classes must make arrangements with other students to obtain notes/materials. Assigned readings are to be done prior to class meetings and will be reviewed at that time. The assigned readings for each class are listed on the last page of the syllabus.

**REQUIRED MATERIAL/TEXT:**


A calculator with a square root key and one storage memory. Please bring to class for in-class demonstrations.

**EVALUATION:**

Weekly quizzes (total of 10) will be given on assigned chapters in an attempt to keep the student current in readings. Each quiz will be worth **10 points** with a cumulative total of **100 points**. The final total will be recorded as an exam grade. Students are expected to take all ten quizzes, which will be of an objective format.

In addition, each student will take four in-class examinations. Each exam will cover a limited amount of information. The first two exams will consist of fifty multiple choice questions to test conceptual knowledge. The final two exams will consist of two parts. Part One will contain twenty-five multiple choice questions, Part Two will consist of two computational problems and a twenty-five point bonus problem which will also involve computations. Students will be allowed to use their notes and texts for **Part Two** of exams three and four only. The dates and chapters from which the test questions will be taken are listed on the last page of the syllabus.
Each student will have a total of five grades reflective of the in-class exams and the weekly quizzes. The **lowest of these five scores will be dropped** and the final grade established on the total points earned on the four remaining scores. Grades will be assigned as follows:

- \(360 - 400 = A\)
- \(320 - 359 = B\)
- \(280 - 319 = C\)
- \(240 - 318 = D\)
- Below 239 = F

**NOTE:** The university does **not** assign credit for grades below the level of a “C”. If a student misses a scheduled exam, the exam must be made up within seven (7) days. There will be **NO** exceptions, and a grade of “Incomplete” will be assigned.

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPIC</th>
<th>READINGS</th>
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<tbody>
<tr>
<td>Sept 1</td>
<td>Introduction to Statistics</td>
<td>Ch. 1</td>
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<td>Frequency Distributions, Graphs and Percentiles</td>
<td>Ch. 2</td>
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<td>Sept 8</td>
<td>Measures of Central Tendency and Variability</td>
<td>Ch. 3 - 4</td>
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<td>Sept 15</td>
<td>Exam One</td>
<td>Ch. 1 - 4</td>
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<td>Sept 22</td>
<td>Standard Scores and the Normal Curve</td>
<td>Ch. 5</td>
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<td>Sept 29</td>
<td>Probability theory and Sampling</td>
<td>Ch. 6</td>
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<td>Hypothesis Testing</td>
<td>Ch. 7 - 8</td>
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<td>Oct 5</td>
<td>Exam Two</td>
<td>Chs. 5 - 8</td>
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<td>Oct 12</td>
<td>Single Sample T Statistic</td>
<td>Ch. 9</td>
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<td>Oct 19</td>
<td>Repeat Measure T Statistic</td>
<td>Ch. 10</td>
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<td>Oct 26</td>
<td>Independent Measures T statistic</td>
<td>Ch. 11 - 12</td>
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<td>Estimation</td>
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<td>Nov 3</td>
<td>Exam Three</td>
<td>Ch. 9 - 12</td>
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Nov 10
One Way Analysis of Variance
Repeat Measure ANOVA
Ch. 13
Ch. 14

Nov 17
Two Way Analysis of Variance
Ch. 15

Nov 24
Correlation and Regression
Ch. 16

Dec 1
Binomial Distribution/Nonparametrics
Ch. 17 - 19

Dec 8
Exam Four
Ch. 13 - 19

NOTE: The subject matter and the content of the class lecture are subject to change at the discretion of the instructor.