1. **Catalog Description:**
   - Sociology 3630
   - Statistical Analysis of Social Data
   - 3-2-4
   - Fall and Spring Semesters
   - Soc. Statistics
   - Survey of statistical techniques used to summarize and describe the quantitative characteristics of social research. The course includes both descriptive and inferential statistics, using statistical software to analyze data.
     - Prerequisite: none.
     - Restriction: Course restricted to Sociology majors.

2. **Objectives:**
   - To develop the capacity to identify, locate and use major statistical concepts.
   - To develop the ability to convert facts into statistical language.
   - To manipulate and interpret data collected in survey research.
   - To be able to calculate and interpret descriptive and inferential statistics.
   - To be able to test hypotheses and interpret the findings.
   - To be able to appraise the quality of research discussed in mass media.

3. **Outline for the Course:**
   **Week 1 & 2:** Organization and orientation.
   - Definition of statistical analysis.
   - Levels of measurement.
   - Reviewing some statistical concepts.
   - Examining the levels of measurement in GSS data.

   **Week 3 & 4:** Basic mathematical concepts
   - Reviewing some basic algebra.
   - Frequency distribution.
   - Graphing techniques: bar graph, histogram, polygon...
   - Using SPSS to make a frequency table and draw graphs.
     - The first examination.

   **Week 5 & 6:** Measures of central tendency:
   - The mean, the median, and the mode. Comparing the measures of central tendencies. Measures of dispersion: the range, the mean deviation, Standard deviation, and variance.

   **Week 7 & 8:** Standard score (Z-Score).
   - Probability Distribution.
   - Normal Distribution.
   - Standard normal distribution.
   - Probability in a normal distribution.
Solving some problems.

- The second examination.

**Week 9 & 10:** Correlation between two variables.
  - Introduction to correlation.
  - Correlation between two nominal variables.
  - Correlation between two ordinal variables.

**Week 11 & 12:** Correlation between interval and ratio variables.
  - Spearman's correlation.
  - Pearsonian correlation.
  - Regression and prediction.

- The third examination.

**Week 13 & 14:** Inferential statistics:
  - Sampling distribution of the means, proportions,…
  - Central limit theorem.
  - Point estimate and interval estimate.
  - Testing a hypothesis—one-sample case.
  - Null and Alternative hypothesis.
  - Five steps of testing a Null hypothesis.

**Week 15:** Testing the significance of a mean, difference of the means…
  - Chi-square: testing the significance of correlation between two nominal scales.
  - Using SPSS for testing the significance of correlations.
  - Testing the significance of correlation, ordinal variables.
  - Testing the significance of correlation, interval variables.
  - Solving problems & review for the final exam.

- Final examination.

**Examination:**
  - The exams focus on problem-solving, applying concepts, and computer jobs.
  - The exams require the ability to calculate statistics and to interpret them.
  - In addition to the exams, the students are responsible to complete and return Seven out of ten homework assignments.

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<thead>
<tr>
<th>Assignment</th>
<th>Weight</th>
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<tbody>
<tr>
<td>The first quarter exam</td>
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<td>The midterm exam</td>
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<td>The third quarter exam</td>
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<td>The final exam</td>
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<tr>
<td>Homework</td>
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4. **Implementation:**

- Instructor: Mahmoud Kashefi, or any qualified faculty member in the Sociology/Anthropology Department.
5. Rationale:
   a. Purpose and need: Statistically literate students can comprehend and critically appreciate research reports written by the mass media, government, companies, and other social organizations. This course equips the students with such knowledge. The statistics course previously offered by the Department of Sociology and Anthropology did not include real data analysis. By revising the course and including GSS (General Social Survey) data analyses (lab work), the students will be able to become familiar with SPSS (a popular social science software), by using it to analyze and interpret data collected from social life.

   b. Justification of the Course Level and the Prerequisites:
      The course will continue to be a three-thousand-level. It contains many sophisticated statistical techniques, including inferential statistics which is only appropriate for a more mature mind with a good math background. There are no prerequisites.

   c. Similarity to existing courses:
      1. No similarity to any other courses in the Department of Sociology/Anthropology.
      2. This revision does not affect programs in other departments.
      3. No courses will be deleted by revising this course.
      4. The number of hours in required classes for sociology majors will be increased from 45 to 46 credit hours.

   d. Requirement or elective: This course is and will be a required course in the sociology major and an elective in the sociology and anthropology minors.

6. Community College Transfer:
   A community college course will not be judged equivalent to this course: the course level is 3000.

7. Date approved by the Sociology/Anthropology Department. 12-7-2000

8. Date approved by COSCC 4-20-2001

9. Date approved by CAA 6-21-2001