SOC3811 Basic Social Statistics (Tentative Syllabus)
Spring 2020 (2/21-05/04), Blegen Hall 120, Tuesdays 5:30-8:00 pm

Instructor information:
Professor Yanjie Bian, 967 SSB, Tel: 4-9554; Email: bianx001@umn.edu;
Office hours: Tue/Thu, 4:00-5:15 pm, or by appointment

TA and lab instructor:
To be given

Study materials:
2. Lecture notes: available from Canvas for soc3811. Required. Special thanks to Professor David Knoke for making available his lecture notes in PDF format.
3. Data for assignments: General Social Surveys, available from the computer lab.
4. STATA is the computer software package we will be using in the class.

Course description:
This course will introduce sociology majors to basic statistical measures and procedures that are used to describe and analyze quantitative data in sociological research. The topics include (1) frequency and percentage distributions, (2) central tendency and dispersion, (3) probability theory and statistical inference, (4) models of bivariate analysis, and (5) multivariate analysis. Lectures on these topics will be given in class, and lab exercises are designed to help students learn statistical skills needed to analyze quantitative data provided in the class. In addition to attendance to lectures and labs, students are expected to read relevant chapters prior to class. There will be two mid-term exams.

This course meets the CLE requirements for the Mathematical Thinking core. We explore the dual nature of social statistics as a body of knowledge with its own logic and way of thinking, and as a powerful tool for understanding and describing social reality. Students in this course are exposed to the mathematic knowledge that underlies key concepts, but they are also shown how each concept applies to real world social science issues and debates. They are asked to demonstrate their mastery of the mathematical concept and its practical application through in-class discussions, problem sets, and exam questions. Students are taught the mathematical foundations of probability and sampling theory; they are taught about sampling distributions; and they are shown the real-world implications of these ideas for how social science knowledge is gained through surveys of randomly sampled observations.

Course Requirements
1. Class attendance and quizzes: You are responsible for attending each class, and you take randomly given quizzes in classes.
2. **Labs and assignments**: Statistics is to be understood and learned by doing the problems, and completing assignments is an essential part of your learning. Eleven assignments will be given in the labs. Each assignment deals with a specific set of techniques taught in the week, and it is given in the lab of the week of lecture and it is due in the next week’s lab. Your lab instructor will provide guidance on how to complete the assignments. You can choose to complete the assignments outside of the labs, and you may choose to miss one assignment without penalty. You will receive a zero on any assignment that is completed using dishonest means, and you will fail the course following a second infraction. No late assignment is accepted.

3. **Exams**: One midterm exam covering the contents before the lectures of multiple regression will be given, and a second exam is given on the contents of multiple regression in the last class for an extra credit. No make-up exam will be arranged unless with a signed doctor's note for illness or with documented evidence for the most unusual of circumstances. In this case, the make-up exam must be taken with your lab instructor and within seven days of the original exam.

4. **Calculator**: You will need a hand calculator with a square root key.

**Grading**

Distribution:

- Lecture and lab attendance and in-class quizzes, 10%;
- 10 out of 11 assignments, each for 5% and a total of 50%;
- Exam #1, 40%;
- Exam #2 for extra credit, 5%.

**Letter grade**:

- 95 and higher=A; 94-90=A-; 89-85=B+; 84-80=B; 79-75=B-
- 74-70=C+; 69-65=C; 64-60=C-; 59-55=D+; 54-50=D; <50=F

**Passing grade**: C-

**Policy on a Make-Up Exam**:

Students who miss the exams—due to verifiable illness, family emergency, religious observance, or mandatory University-sponsored event—must take a makeup exam on a scheduled date. A departmental make-up exam will be held after the Spring Semester on a date to be announced, and the incomplete grade will change to a new grade taking into account this makeup exam and all other coursework. From past experience, scores on make-up exams tend to be much lower than scores on scheduled exams, so you should make every effort to take all exams as scheduled in class. A written verification (e.g., an assigned doctor’s note) must be presented before a makeup exam is permitted by the instructor.
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<tr>
<th>Month/Dates</th>
<th>Topics</th>
<th>Readings</th>
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<tbody>
<tr>
<td>1/21</td>
<td>The social research process and measurement Assignment #1</td>
<td>Chap 1</td>
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<tr>
<td>1/28</td>
<td>Frequency distribution Assignment #2</td>
<td>Chap 2</td>
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<td>Central tendency and dispersion Assignment #3</td>
<td>Chap 2</td>
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<td>Basics of statistical inference &amp; estimation Assignment #4</td>
<td>Chap 3</td>
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<td>2/18</td>
<td>Hypothesis testing for one mean Assignment #5</td>
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<td>Hypothesis testing for two means Assignment #6</td>
<td>Chap 4</td>
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<td>3/4</td>
<td>Hypothesis testing for multiple means Assignment #7</td>
<td>Chap 4</td>
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<td>3/10</td>
<td><strong>Spring Break: No Class</strong></td>
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<td>3/17</td>
<td>Bivariate crosstabulation Assignment #8</td>
<td>Chap 5</td>
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<td>3/24</td>
<td>Bivariate regression and correlation Assignment #9</td>
<td>Chap 6</td>
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<td>3/31</td>
<td>More on bivariate regression and review for Exam #1 No new assignment but lab is used to conduct review</td>
<td>Handout</td>
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<td>4/07</td>
<td><strong>Exam #1 on contents of Chapters 1-6</strong></td>
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<td>4/14</td>
<td>Multiple regression with continuous independent variables and dummy variables Assignments #10 &amp; #11</td>
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<td>4/21</td>
<td>Multiple regression: interaction terms and advanced topics Assignment #12 Review for Exam #2</td>
<td>Chap 8</td>
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<td>4/28</td>
<td><strong>Exam #2 on multiple regression for extra credit</strong></td>
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