

Department of Sociology/Anthropology
Eastern Illinois University
Social Statistics: Spring 2009

INSTRUCTOR: M. Kashefi, Ph.D.
Office hours: M & W: 8:00-11:00
Office: Blair Hall 3151
Phone: 581-6216
E-mail: mkashefi@eiu.edu

Read this syllabus carefully. It clarifies the assignments, the rules, and other issues related to this course. If you have a documented and wish to discuss academic accommodations, please contact me as soon as possible. **Here are: [Disabilities, building fire, medical emergency, and tornado statements.](#)**

Course Objective:

This course aims to teach you how to analyze sociological sort of data, i.e., how to manipulate the data to obtain valid answers to the theoretical questions you are interested in. In addition to how-to-compute, I will emphasize the reasons behind, and the logic of, various statistical techniques. You should finish this course with a reasonable knowledge about the basic language and logic of descriptive and inferential statistics which allow you to appraise the quality of research and statistics discussed in mass media, in government publications, and/or in other organizational printouts.

A good working knowledge of high school algebra will be assumed. If you have not had mathematics for a while, or feel uncomfortable with algebra, I advise some review (for a review see: Soc. 3610 on WebCT, Algebra).

Required Text: Healy, Joseph (2009): ***Statistics: A Tool for Social Research***, Belmont: Wadsworth Publishing Company.

Teaching Procedure: This course is structured with lectures, discussions, and problem solving assignments three times a week (two lectures and one Lab). Before coming to class you should finish the reading assignment relevant to the lecture and solve a few related problems. *It is extremely important for you to finish the reading assignments before it is covered in class.* You are expected to attend each lecture; if you are absent from any lecture it is your responsibility to make sure that you are aware of the subject covered. During the lectures, enough time will be assigned for answering questions and solving problems. The lectures are prepared to enhance your statistical knowledge and answer your questions. Therefore, [you are absolutely free to ask your questions until you understand the subjects.](#)

Evaluations:

- **Examinations:** Four in-class exams: Two of them (Exam # 1 & 3) are multiple choice (150 points each), and the Mid-term and the final exams include several short answer questions along with some problems to be solved (250 points each). *They are NOT cumulative.* The dates of exams **depend** on the teaching progress.
- **Homework:** Eight homework assignments. You are responsible to finish **and return six of them** (25 points for each one, total 150 points). **Due date for the homework is 8:00/9:30 a.m. of the designated days. No credit for a late homework; do not put your homework in my mail-box.**
- **Lab Assignments:** There are, at least, ten lab assignments. The value of each assignments is between 7-10 points (a total of 50 points lab assignments are required).

Points and Grading Remarks:

Examination # 1 = 150 points or 15%
 Examination # 2 = 250 points or 25%
 Examination # 3 = 150 points or 15%
 Final exam..... = 250 points or 25%

Homework (6*25)= 150 points or 15%
 Lab-work...(5*10)= 050 points or 05%

 TOTAL = 1000 points or 100%

Grading Scale (tentative):

100-----A-----90 (If you miss up to 10% in all the exams/assignments).
89-----B-----80 (If you miss more than 10% up to 20% in all of them).
79-----C-----70 (If you miss more than 20% up to 30% in all of them).
69-----D-----60 (If you miss more than 30% up to 40% in all of them).
59-----F-----00 (If you miss more than 40% in all the exams/assignments).

Some Important Class Rules:

1. Do not miss your exams: ***No make-up exam*** without a written documentation for emergency.
 2. A late homework is NOT acceptable. You have the option of missing two of the eight homework.
 3. Class attendance is ***required***. It is extremely important for you not to miss *any* of your classes.
 4. You are allowed to miss your classes or labs up to three times during the entire semester.
(There will be penalty for each additional missed classes).
 5. You have to be in class both physically and mentally.
 6. Napping is NOT allowed during the class/lab meetings.
 7. Reading news-paper is NOT allowed during the lectures.
 8. Eating during the lectures is NOT allowed.
 9. Please do not come late (coming late = class interruption).
 10. [The requirements of class environment](#)
-

Tentative Course Outline:

Week 1: Read Chapter 1 and 2:

- Organization and orientation.
 - Definition of statistical analysis.
 - Some major statistical concepts.
 - Levels of Measurement.
 - Some descriptive statistics.
- Read Chapter # 1 & 2; answer questions # 1.4, 1.5, 2.2.**

Week 2: Read chapter 2, sections 5-7.

- Using SPSS to analyze data.
 - Reviewing some basic algebra.
 - Frequency Distribution and graphing.
 - Solving some problems.
- [Read Chapter # 2 answer questions # 2.7 & 2.8](#)

Week 3: Read Chapter 3, sections 1-7:

- Measures of central tendency:
 - The mean, the median, and the mode.
 - Measures of central tendency and the levels of measurement.
 - Comparing the measures of central tendencies.
 - Using SPSS to calculate measures of central tendency.
- [Read Chapter # 3; answer questions # 3.3 & 3.13](#)

Week 4: Read Chapter 4, Sections 1-8.

- Measures of dispersion.
 - The range, the mean deviation, standard deviation, and variance.
 - Comparing the measures of dispersion.
 - Solving some problems and answering questions.
- [Read Chapter # 4; answer questions # 4.2, 4.4, & 4.8 b](#)

The First Examination

Week 5: Read Chapter 5, Sections 1-6.

- Standard score (Z-Score).
 - Probability Distribution.
 - Normal Distribution.
 - Standard normal distribution.
 - Probability in a normal distribution.
 - Solving some problems.
- [Read Chapter # 5; answer questions # 5.3 & 5.11](#)

•

Week 6: Read Chapter 6, Sections 1-5.

- **Inferential statistics:** A few key concepts:
 - Sampling distribution of the means.
 - Central limit theorem.
- Estimation of a parameter.
- Point estimate.
- Estimation of a population's mean.

- Solving some problems.
[Read Chapter # 6 \(think about "sampling distribution" & "central limit theorem"\)](#)

Week 7: Read Chapter 7, Sections 1-7.

- **Inferential statistics:** A few key concepts:
Sampling distribution of the proportions.
- Estimation of a parameter.
- Interval estimate, confidence interval.
- Estimation of a population's proportion.
- Solving some problems.
[Read Chapter # 7; answer questions # 7.7 & 7.9](#)

The Mid-term examination

Week 8: Read Chapter 8, Sections 1-7 & Chapter 9, Sections 1-6.

- Hypothesis testing, one sample test.
- Hypothesis testing, one or two tailed test.
- Hypothesis testing, for large and small samples.
- Five steps in testing the hypothesis.
- Solving some problems.
[Read Chapter # 8; answer questions # 8.8, 8.11, & 8.14](#)

Week 9: Read Chapter 8, Sections 9, Sections 1-6.

- Hypothesis testing, two sample test.
- Hypothesis testing, for mean and proportion.
- Five steps in testing the hypothesis.
- Solving some problems.
[Read Chapter # 9; answer questions # 9.3a & 9.7b](#)

Week 10: Read Chapter 10, Sections 1-8.

- The Analysis of variance:
- The logic of ANOVA.
- Using SPSS to test ANOVA.
- Solving some problems.
[Read Chapter # 10; answer questions # 10.5](#)

Week 11: Read Chapter 12, 13, & 14, all Sections.

- Introduction to Correlation.
- Scatter diagrams to display correlation.

- Measures of association between two **nominal variables**.
- *Lambda and PRE interpretation*
- Calculation and interpretation for phi.
- Calculation and interpretation for Cramer's V.
Read Chapter # 12; answer questions # 12.5

The third examination

Week 12: Read Chapter 11 & 13, Sections 1-3 & Chapter 14, Sections.

- Chi-Square and correlation test.
- Testing the significance of Chi-Square.
- Interpretation of Chi-Square.
- Using SPSS for testing Chi-Square.
- Solving some problems.
Read Chapter # 11 and 13; answer questions # 13.3 & 13.10

Week 13: Read Chapter 14, all sections.

- Correlation between to **ordinal variables**.
- Calculation and interpretation for Gamma
- Calculation and interpretation for Somers' D.
- Calculation and interpretation for Kendal T-b.
- Spearman's Rho and its test.
Read Chapter # 14; answer questions # 14.4 & 14.12

Week 14: Read Chapter 15, Sections 5-8.

- Scatter diagram.
- Spearman's Correlation.
- Testing the significance of the correlation.
- Solving some problem/ answering questions.
Read Chapter # 15; answer questions # 15.2 a, d, e, & f.

Week 15: Read Chapter 15, Sections 3-4.

- Regression and prediction.
- Testing for significance of correlation.
- Interpretation of coefficients.
- Review and solving some problems for the final exam.
Read Chapter # 15; answer questions # 15.2 b & c.

The final examination: See EIU final exam schedule.
